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Detailed results on the institutional program of the graduate record examinations administered for the third consecutive year to sophomores and seniors at the State College of Iowa. Includes tables correlating high school rank with test performance and tables comparing the performance of Iowa students with national and Midwest norms.

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Research Report No. 97

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1962 Sophomore-Senior Testing Program

Bureau of Research and Examination Services
State College of Iowa
Cedar Falls, Iowa

ED000852

1962 SOPHOMORE-SENIOR INSTITUTIONAL TESTING PROGRAM
GRADUATE RECORD EXAMINATIONS

STATE COLLEGE OF IOWA

INTRODUCTION

PURPOSE:

The Institutional Testing Program of the Graduate Record Examinations, Educational Testing Service, was conducted at the State College of Iowa in April, 1962, which marked the third consecutive year that the program had been used at this institution. All students with sophomore and senior classification were included in the program. The program was selected to serve the following two broad purposes:

1. To provide some objective evidence with which the faculty may evaluate the effectiveness of the curricula in terms of norm groups.

2. To provide the individual student with data by which he could compare his achievement with different norm groups.

The Institutional Testing Program as used at the State College of Iowa included the Area Tests and the Advanced Tests. The Area Tests are designed to measure the broad outcomes of education in the liberal arts. The Advanced Tests yield measures of achievement in selected fields of study.

Sophomores and seniors at the State College of Iowa were both administered the Area Tests and the Advanced Tests. The Advanced Tests were used with sophomores to establish base lines for measures of subsequent growth. It is the plan to use the Advanced Tests again in 1964 when the 1962 sophomores are seniors.

The main objectives of the sophomore program may be more specifically stated as follows:

1. To provide for an appraisal of the student's orientation in the three areas of liberal arts: social science, humanities, and natural science.

2. To provide for a comparison of State College of Iowa sophomores with national sophomore norms.

3. To provide for a comparison of State College of Iowa sophomores with national senior norms.

4. To provide for a comparison of State College of Iowa sophomores with sophomores in selected midwest colleges and universities.

5. To establish base lines for measures of subsequent growth in the major fields of study.

6. To compare the performance of State College of Iowa sophomores and seniors in the areas of general education and in major fields of study.

The main objectives of the senior program may be more specifically stated as follows:

1. To provide for an appraisal of the student's orientation in the three areas of liberal arts: social science, humanities, and natural science.

2. To provide for a comparison of State College of Iowa seniors with national senior norms.

3. To provide for a comparison of State College of Iowa seniors and sophomores.

4. To provide for a comparison of State College of Iowa seniors with students in midwest colleges and universities.

5. To compare the performance of the same students as sophomores and seniors in the area of general education.

TESTS USED:

With the exception of three subject area tests, the total sophomore-senior program was the Institutional Testing Program For Colleges and Universities, The Graduate Record Examinations, Educational Testing Service, Princeton, New Jersey. The Area Tests battery was administered to both the sophomores and seniors as well as the Advanced Tests. The following Advanced Tests were available:

Biology
Chemistry
Education
French
History
Literature
Mathematics
Music
Physics
Spanish
Speech

The Graduate Record Examinations program does not provide for Advanced Tests in all subject areas. The following tests, not available in the GRE program were selected from the Teacher Education Examination Program, Educational Testing Service:

Social Science
Industrial Arts

A test in Business Education was made available through the United Business Education Association, a department of the National Education Association. A test in Business Fundamentals and one in Bookkeeping were used in this area.

NORM GROUPS:

Four sets of norms have been used in evaluating the 1962 State College of Iowa Institutional Testing Program and provide the bases for analyses in this report.

1. The national norms for sophomores on the Area Tests, (GRE), as provided by Educational Testing Service.

2. The national norms for seniors on the Area Tests, (GRE), as provided by Educational Testing Service.

3. The national norms for seniors on the Advanced Tests, (GRE), as provided by Educational Testing Service.

4. The norms for selected midwest colleges and universities who cooperated in the program in 1961 as computed for the group by Educational Testing Service. Throughout the report these norms have been referred to as "Midwest Norms". The following institutions made up the regional group:

   Ball State Teachers College, Muncie, Indiana
   Black Hills Teachers College, Spearfish, S. D.
   Fort Hays Kansas State College, Hays, Kansas
   Kansas State College, Pittsburg, Kansas
   Nebraska State Teachers College, Kearney, Nebr.
   Nebraska State Teachers College, Wayne, Nebr.
   State College of Iowa, Cedar Falls, Iowa

ARRANGEMENT OF THE REPORT:

The report has been arranged in four parts according to classes, as follows:

PART I : Report of the Sophomore Class on the Area Tests, (GRE).

PART II : Report of the Sophomore Class on the Advanced Tests, (GRE), and Other Tests in the Subject Area Fields.

PART III : Report of the Senior Class on the Area Tests, (GRE).

PART IV : Report of the Senior Class on the Advanced Test, (GRE), and Other Tests in Subject Area Fields.

Bureau of Research and Examination Services
State College of Iowa
Cedar Falls, Iowa

H. M. Silvey, Director
Blanche Harland, Secretary

September 14, 1962

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GENERAL SUMMARY

This report of the 1962 institutional testing program shows the distribution of scores of State College of Iowa sophomores and seniors on the Graduate Record Examinations, and shows comparisons with the national norm group and the midwest norm group. Differences between groups have been calculated on the mean performance of the groups.

A wide use has been made of graphs and charts in this report to depict the results in addition to the use of numerical tabulations. A graphic device for visual comparisons of distributions has been used which shows several characteristics of the distributions at a brief glance. The graphical device used not only permits the comparison of mean performance of groups, but also portrays the variability or dispersion of the distribution between reference points along the scale.

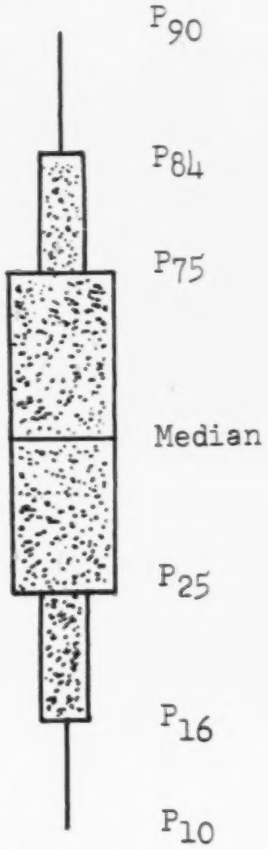
EXPLANATION OF THE DIAGRAM:

1. The median of the group is marked by the short horizontal line toward the middle of the large rectangle.

2. The range of the middle 50 per cent (from P_{25} to P_{75}, or Q_1 to Q_3), is shown by the large rectangle.

3. The reduced rectangles extend out to P_{84} and P_{16} which are points that include approximately the middle two-thirds of the distribution.

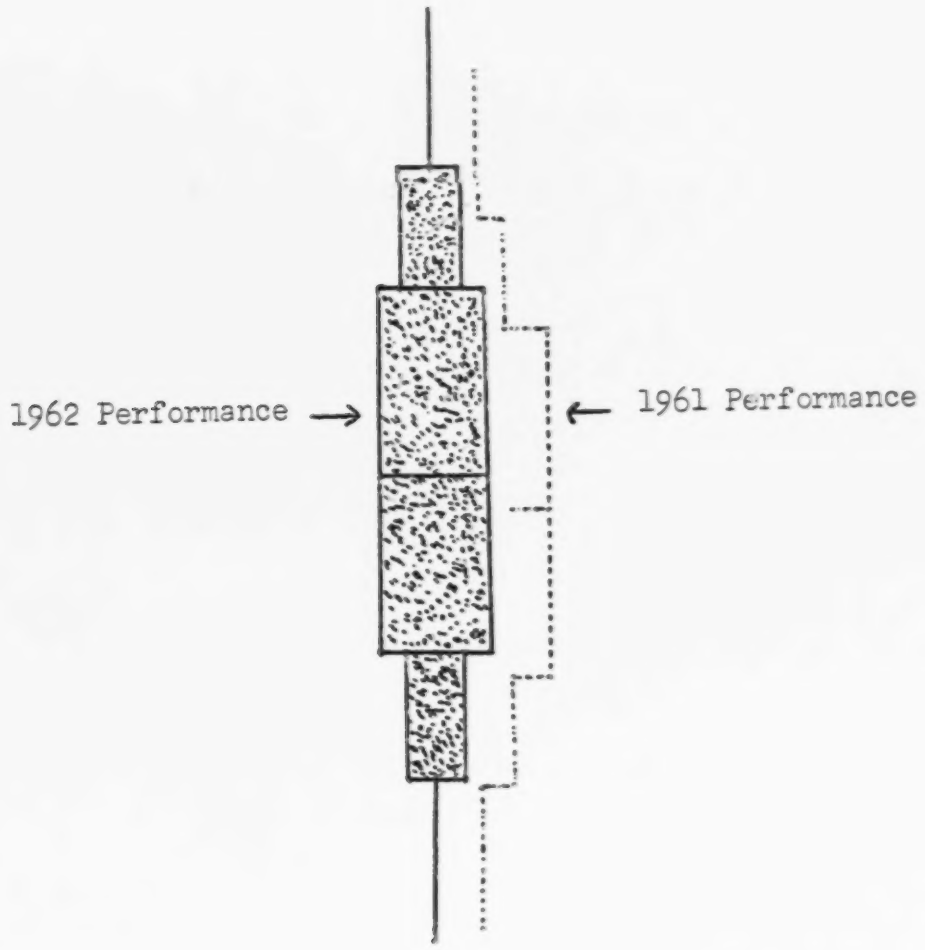
4. The single black lines extend out to points P_{10} and P_{90} to include the middle 80 per cent of the cases.



The differences between groups have been indicated as statistically significant or not statistically significant. A statistically significant difference is defined as meaning a difference of sufficient magnitude that it did not likely happen by chance but represents a real difference. All statistics which have been identified by the asterisk (*) indicate differences (either above or below) which are of sufficient magnitude to constitute a "real" difference and not a chance difference. Those statistics not identified by the asterisk (*), and which reflect differences are not significantly different and may be regarded about equal to the norm group.

PERFORMANCE OF 1962 AND 1961 GROUPS COMPARED

Since the Graduate Record Examinations were administered to sophomores and seniors at the State College of Iowa in 1961 and 1962, comparisons have been made between 1961 and 1962 sophomores and 1961 and 1962 seniors. The comparisons have been shown in the report by the diagram illustrated and described below.



In the diagramatic presentation of the test score performance of the 1962 group of students at the State College of Iowa, the performance of the 1961 group has also been shown. The sketch above shows the legend of the presentation. The completed diagram to the left represents the 1962 group and the partial diagram on the right represents the 1961 group.

GENERAL SUMMARY STATEMENTS

GRADUATE RECORD EXAMINATIONS

SOPHOMORES: AREA TESTS

The following summary statements refer to STATE COLLEGE OF IOWA students as compared with other groups.

1. The total sophomore group (men and women) scored significantly higher than the national mean for sophomores in all areas: social science, humanities, and natural science.

2. The total sophomore group (men and women) scored significantly higher than the midwest sophomores in all areas.

3. The sophomore men scored significantly higher than the national sophomore norm group in social science and natural science. In the area of humanities the mean score was not significantly different from the national norm.

4. The sophomore women scored significantly higher than the national sophomore norm group in all areas.

5. Sophomore men scored significantly higher than national sophomore norms for men in all areas.

6. Sophomore women scored significantly higher than national sophomore norms for women in all areas.

7. The total sophomore group scored significantly higher than the national senior norms in all areas.

8. Sophomore men scored significantly higher than the national senior norms in social science and natural science. The mean score in the humanities was not significantly different from national senior norms.

9. Sophomore women scored significantly higher than the national senior norms in all areas.

10. Sophomore men scored significantly higher than the national senior norms for men in natural science. In the humanities and social science the mean scores were not significantly different from national senior norms.

11. Sophomore women scored significantly higher than the national senior norms for women in social science and natural science, but not significantly different in the humanities.

12. The 1962 group of sophomores were about equal in performance to the 1961 group.

SOPHOMORES: ADVANCED TESTS

Advanced Tests (GRE) were administered to sophomores in 1962 to establish base lines for measuring subsequent growth in the subject matter fields. State College of Iowa sophomores in 1962 have been compared with the performance of State College of Iowa seniors and with national norms for seniors.

1. State College of Iowa sophomore scores were significantly lower than State College of Iowa senior scores in the following fields:

   Biology
   Chemistry
   Education
   History
   Literature
   Music
   Speech

   In mathematics there was practically no difference in scores.

2. State College of Iowa sophomores had mean scores significantly lower than national norms for seniors in the following fields:

   Biology
   Chemistry
   Literature
   Mathematics
   Music
   Speech

SENIORS: AREA TESTS

1. The total senior group (men and women) made mean scores significantly higher than the national mean for seniors in all areas: social science, humanities, and natural science.

2. Senior men scored significantly higher than national senior norms (both men and women) in social science and natural science, but not significantly different in the humanities.

3. Senior women scored significantly higher than national senior norms (men and women) in all three areas of the test.

4. Senior men scored significantly higher than national norms for men in all areas.

5. Senior women scored significantly higher than national norms for women in all areas.

6. The total senior group (men and women) scored significantly higher than the midwest total senior group in all areas.

7. The mean scores of senior men and sophomore men at State College of Iowa were not significantly different in any area.

8. The mean scores of senior women and sophomore women at State College of Iowa were not significantly different in any area.

9. The 1962 group of State College of Iowa seniors were very similar in performance to the 1961 group of seniors.

SENIORS: GROWTH ON AREA TESTS

In 1960, 681 sophomores were tested with the Area Tests (GRE). Of the 681 in 1960 who took the tests, 292 remained to repeat the tests as seniors in 1962. This procedure was followed to ascertain the growth, if any, from the sophomore to the senior year in the area of general education as measured by the Area Tests.

1. In Social Science and Humanities the scores in the senior year were significantly higher than in the sophomore year. The 14-point gain of the senior score over the sophomore score in Natural Science was short of significance.

   There is no suggestion in this summary to indicate that the gains were as they should have been. This decision rests with other judgments.

2. The 292 people who took the tests as sophomoresand as seniors made a mean score both times significantly higher than the national norm mean.

3. Students who took the tests as sophomores but who dropped from school and did not take the tests as seniors had scores significantly lower than the sophomore scores of the 292 people who remained.

   This group of drop-outs had a mean score at about the national mean.

4. There were 225 people who did not take the tests as sophomores but who transferred to the State College of Iowa and took the tests as seniors. This group had a mean score significantly above the national mean. This group had scores about equal to the 292 people who took the tests both times.

SENIORS: ADVANCED TESTS

1. The total senior group (men and women) secured significantly higher mean scores than national means on Education and Speech.

2. The total senior group (men and women) had mean scores significantly lower than national norms on Mathematics and Physics.

3. There were no significant differences in mean scores made by State College of Iowa seniors and national norms in the following Advanced Tests:

   Biology
   Chemistry
   History
   Literature
   Music

4. The total senior group (men and women) secured significantly higher mean scores than midwest seniors on the following Advanced Tests:

   Education and Literature

   There was no significant difference in mean mathematics scores.

SENIORS: TEACHER EDUCATION EXAMINATION PROGRAM

Two of the Teaching Field Tests of the Teacher Education Examination Program were administered to State College of Iowa seniors in the major fields of Social Studies and Industrial Arts.

The State College of Iowa seniors secured slightly higher mean scores on both tests but not enough to be counted as a real difference.

SENIORS: BUSINESS FUNDAMENTALS; BOOKKEEPING

Two tests were administered to seniors in the field of business education from the tests of the National Business Entrance Tests, United Business Education Association.

1. The median score on the Business Fundamentals Test made by State College of Iowa seniors was equivalent to the national 76th percentile.

2. The median score in Bookkeeping was equivalent to the national 41st percentile.

PART I

SOPHOMORES

AREA TESTS, GRADUATE RECORD EXAMINATIONS

The analyses and comparisons presented in PART I are based on three norm groups as follows:

1. State College of Iowa sophomores were compared with 5,611 second-semester sophomores tested in the GRE institutional testing program at seventy-seven colleges which administered the Area Tests to their second-semester sophomores during the period July 1, 1956 through June 30, 1957.

2. A second norm group was made up of 14,685 second-semester seniors tested in the GRE institutional testing program at one hundred ninety-two colleges which administered the Area Tests during the period July 1, 1956 through June 30, 1957.

3. A third norm group was made up of 1,585 sophomores in seven selected midwest colleges tested in the spring of 1961.

When comparing student performance on the different tests in the battery, it should be kept in mind that although the scaled scores on the various tests may appear very similar a score on any one test that is numerically equal to a score on another test does not necessarily mean the same level of achievement because the tests are measures of different areas and abilities. For example, the national means for sophomore norms for the different areas are as follows: Social science 392; humanities 437; and natural science 444.

TABLE I

MEANS AND STANDARD DEVIATIONS ON GRADUATE RECORD EXAMINATIONS, AREA TESTS, FOR NATIONAL SOPHOMORES, SCI SOPHOMORES, AND MID-WEST SOPHOMORES

Sophomore Groups	No. of Students	Social Science		Humanities		Natural Science	
		Mean	S.D.	Mean	S.D.	Mean	S.D.
NATIONAL SOPHOMORES							
Men	2811	396	101	411	83	459	92
Women	2800	387	98	463	96	430	80
Total	5611	392	99	437	93	444	87
SCI SOPHOMORES							
Men	342	465	91	447	79	510	70
Women	409	461	87	486	75	484	66
Total	751	463	89	468	79	496	69
MID-WEST SOPHOMORES							
Men and Women	1585	408	94	436	83	473	80

TABLE II

CORRELATIONS BETWEEN GRADUATE RECORD EXAMINATIONS, AREA TESTS, AND OTHER FACTORS

Factors	Factors																	
	1 Social Science			2 Humanities			3 Natural Science			4 Spring Grade P.A.			5 Mental Ability			6 Reading		
	M	W	T	M	W	T	M	W	T	M	W	T	M	W	T	M	W	T
2	.43	.56	.46															
3	.54	.51	.53	.38	.49	.37												
4	.48	.56	.50	.37	.48	.46	.38	.58	.45									
5	.57	.64	.61	.33	.59	.46	.53	.56	.54	.41	.57	.49						
6	.59	.62	.61	.37	.53	.46	.36	.49	.44	.64	.67	.66	.64	.67	.66			
7	.30	.33	.26	.24	.32	.35	.28	.39	.23	.47	.56	.53	.44	.48	.41	.24	.42	.31

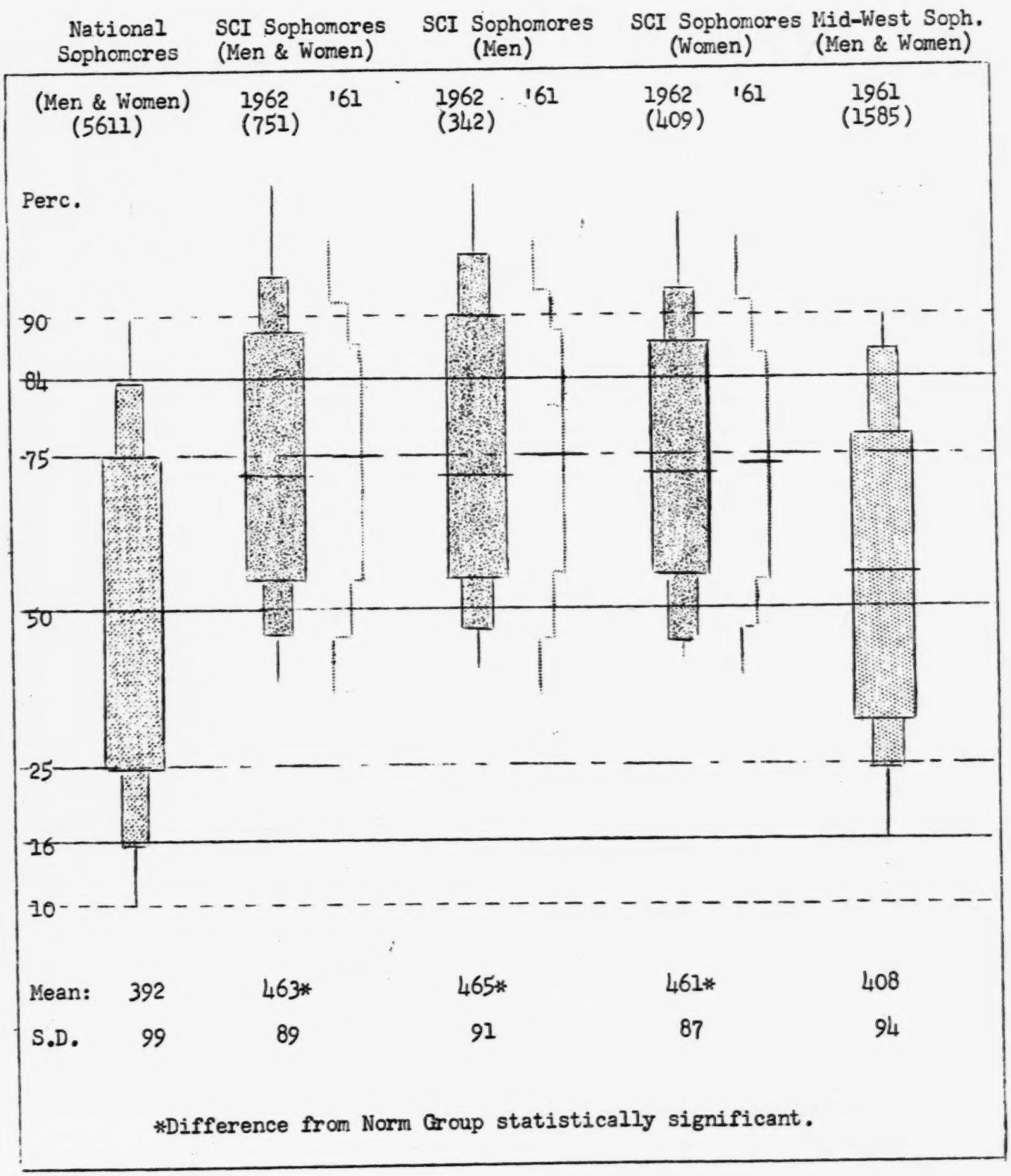
Code to Factors:
1 Social Science
2 Humanities
3 Natural Science
4 Spring Grade Point Average
5 Mental Ability
6 Reading
7 High School Decile Rank

Note: M W T in the Table refers to Men, Women, and Total.

SOPHOMORES

Figure 1: Graduate Record Examinations Area Test in SOCIAL SCIENCE

Comparison of Performance of SCI Sophomores Spring 1962
with National Norms for Sophomores and with Mid-West Sophomores

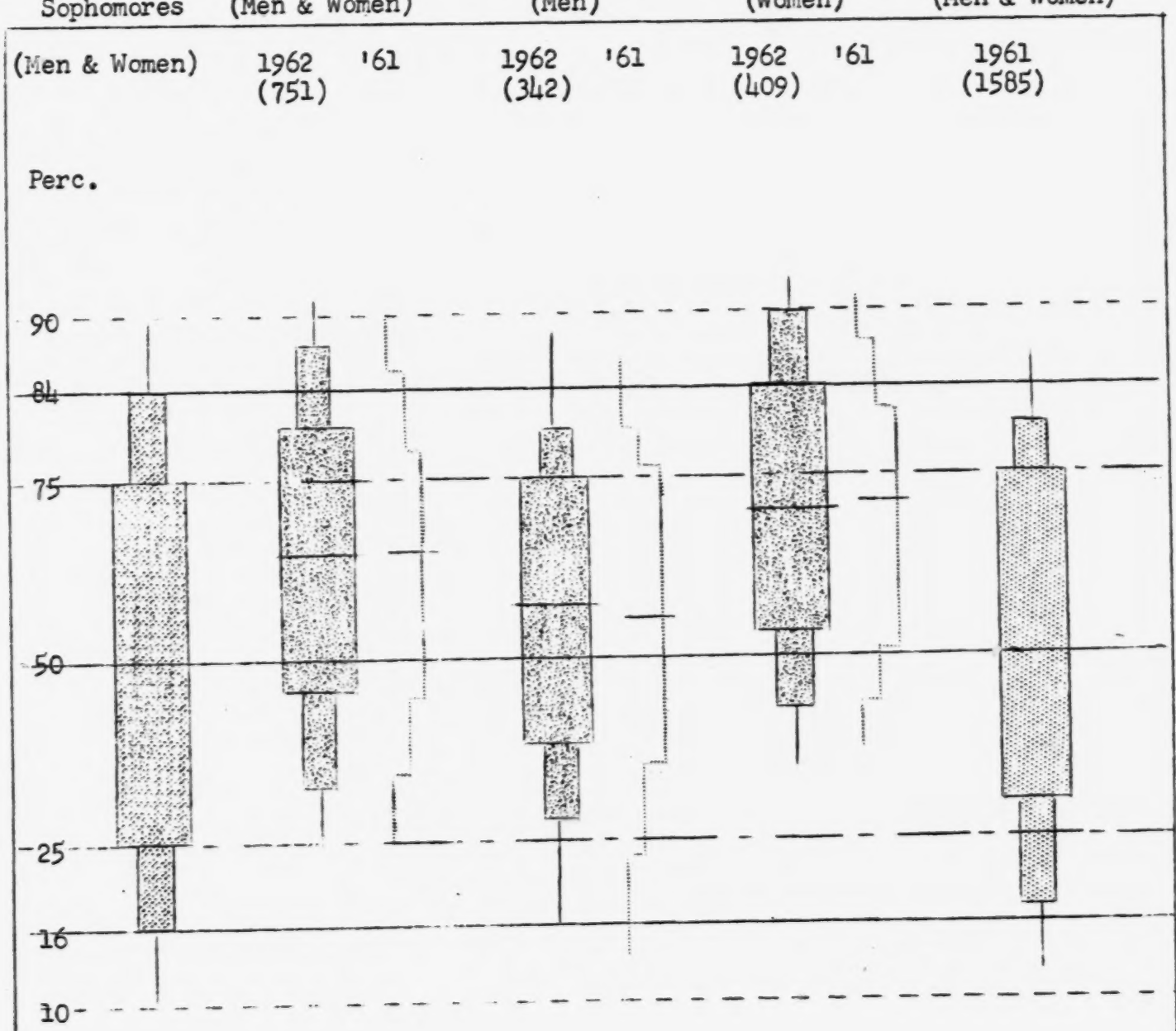


*Difference from Norm Group statistically significant.

SOPHOMORES

Figure 2: Graduate Record Examinations Area Test in HUMANITIES

Comparison of Performance of SCI Sophomores Spring 1962
with National Norms for Sophomores and with Mid-West Sophomores

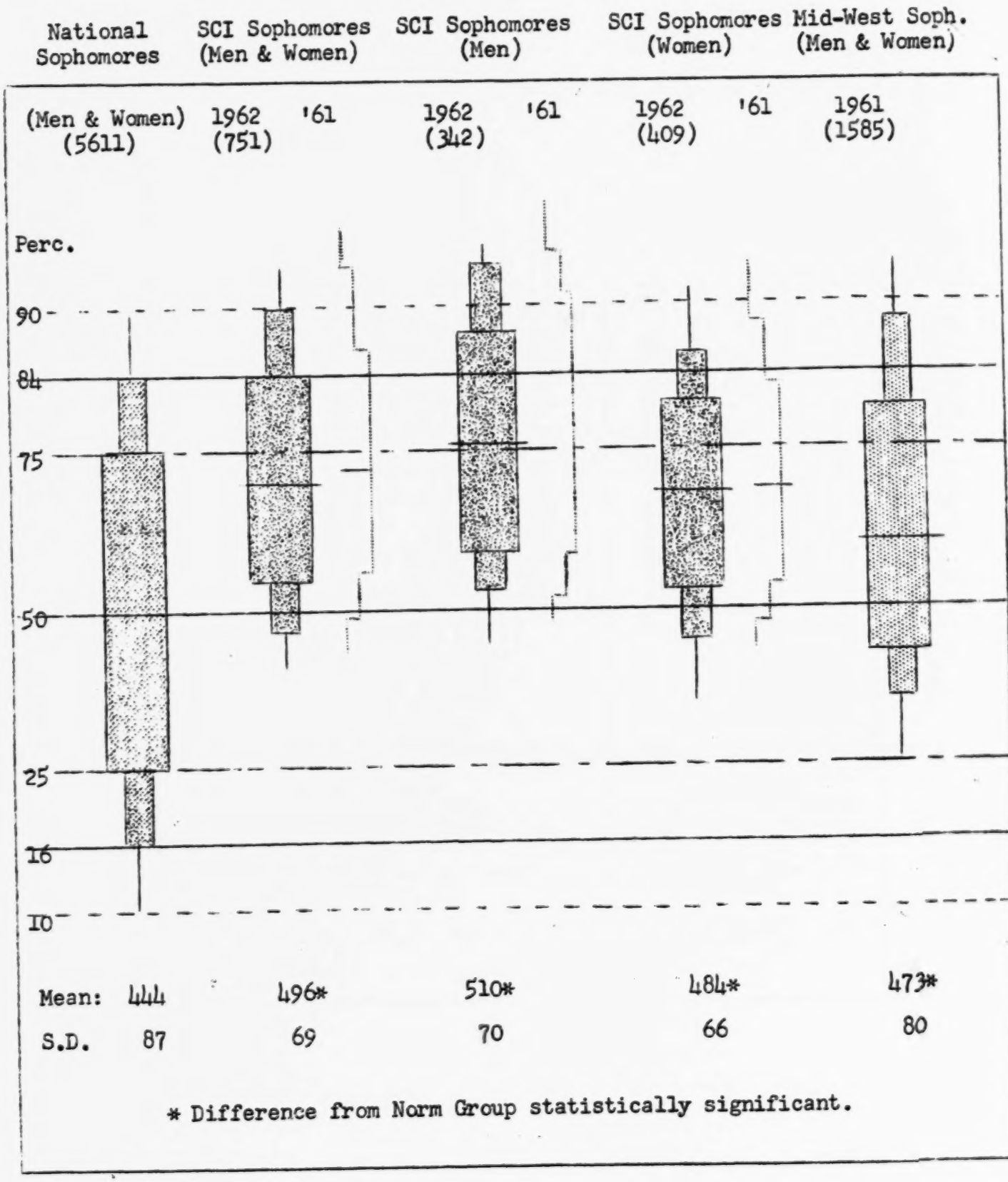


* Difference from Norm Group statistically significant.

SOPHOMORES

Figure 3: Graduate Record Examinations Area Test in NATURAL SCIENCE

Comparison of Performance of SCI Sophomores Spring 1962
with National Norms for Sophomores and with Mid-West Sophomores



* Difference from Norm Group statistically significant.

TABLE III

GRE: AREA TESTS

NATIONAL PERCENTILE EQUIVALENTS OF SCALED SCORES
BASED ON SCORES SECURED BY 5611 SOPHOMORES TESTED 1956-57

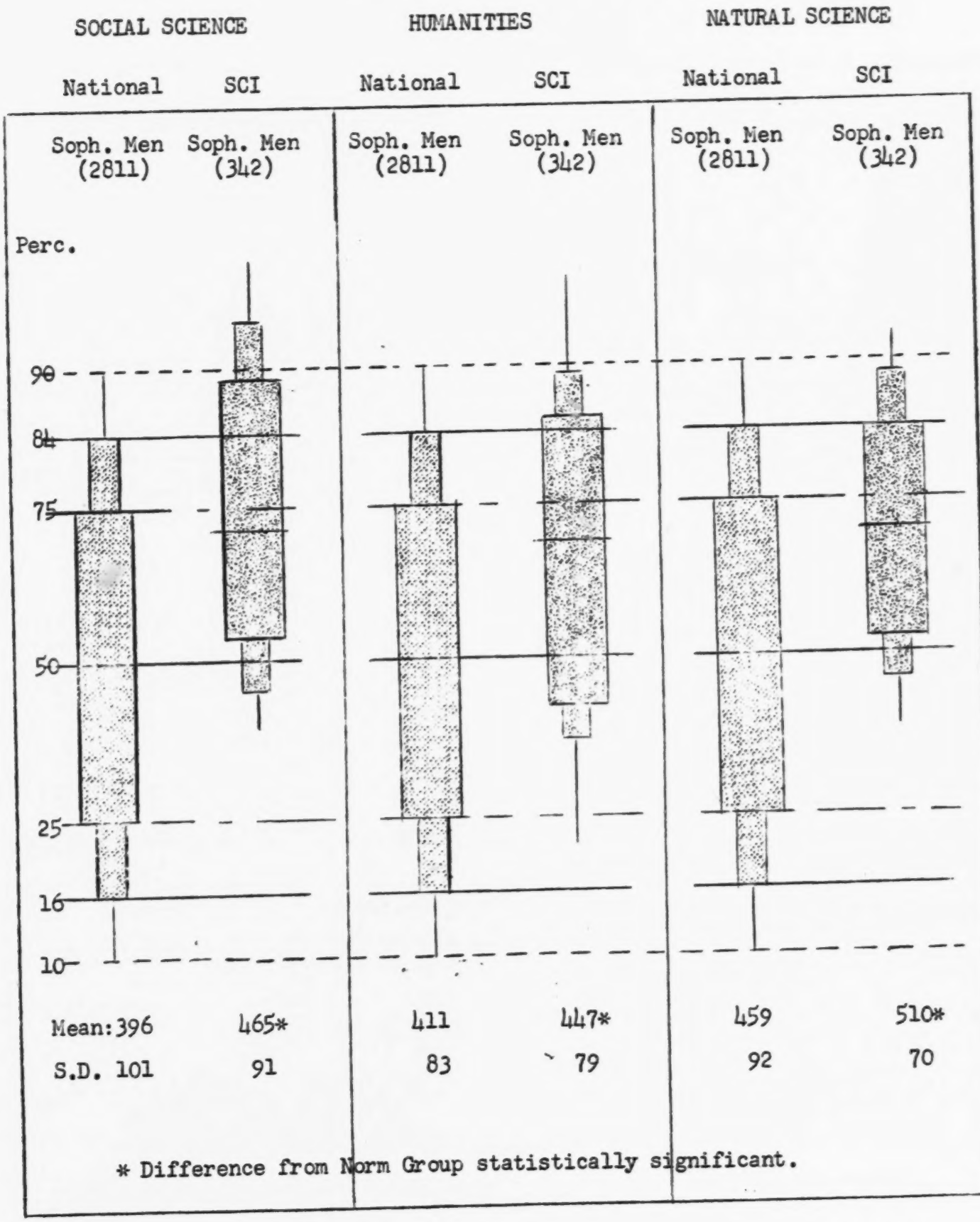
Scaled Scores	Social Science			Humanities			Natural Science		
	Men	Women	Total	Men	Women	Total	Men	Women	Total
700					99				
680					98	99	99		99
660					97	98	98		98
640	99		99	99	95	97	96	99	98
620	98	99	98	98	93	96	94	98	96
600	97	98	98	97	90	93	91	96	94
580	95	97	96	96	87	91	88	95	92
560	93	95	94	95	83	89	83	92	87
540	90	92	91	92	77	84	78	87	82
520	87	89	88	89	72	80	73	84	78
500	83	85	84	84	64	74	65	78	71
480	78	80	79	79	57	68	60	73	66
460	71	75	73	74	51	62	51	65	58
440	66	70	68	65	41	53	45	58	52
420	59	62	60	58	35	46	37	49	43
400	53	57	55	45	25	35	31	41	36
380	44	48	46	37	19	28	23	30	26
360	37	41	39	24	12	18	14	20	17
340	30	32	31	17	9	13	9	14	11
320	25	26	25	12	6	9			
300	17	19	18	6	3	4			
280	12	14	13	3	1	2			
260	7	9	8						
240	4	4	4						
220	3	2	2						
200									
Mean	396	387	392	411	463	437	459	430	444
S. D.	101	98	99	83	96	93	92	80	87
No. of Students	2,811	2,800	5,611	2,811	2,800	5,611	2,811	2,800	5,611

GRE INSTITUTIONAL TESTING PROGRAM 1956-1957
COLLEGES AND UNIVERSITIES ADMINISTERING AREA TESTS TO SOPHOMORES

Arkansas College, Arkansas
Barry College, Florida
Blackburn College, Illinois
Butler College, Texas
Canisius College, New York
Chestnut Hill College, Pennsylvania
College of Notre Dame of Maryland, Maryland
College of St. Mary, Nebraska
College of St. Scholastica, Minnesota
College of Steubenville, Ohio
Dana College, Nebraska
Delaware State College, Delaware
Detroit Institute of Technology, Michigan
Duquesne University, Pennsylvania
Eastern Mennonite College, Virginia
Edgewood College of the Sacred Heart, Wisconsin
Findlay College, Ohio
Georgian Court College, New Jersey
Gordon College, Massachusetts
Goucher College, Maryland
Hillyer College, Connecticut
Huntington College, Indiana
John Brown University, Arkansas
King College, Tennessee
King's College, New York
LaGrange College, Georgia
Lakeland College, Wisconsin
Madonna College, Michigan
Merrimack College, Massachusetts
Milligan College, Tennessee
Milton College, Wisconsin
Morgan State College, Maryland
Morris Harvey College, West Virginia
Mount Marty College, South Dakota
Mount St. Agnes College, Maryland
Nasson College, Maine
Nazareth College, New York
Newton College of the Sacred Heart, Massachusetts
Northwestern College, Minnesota
Oakland City College, Indiana
Olivet College, Michigan
Park College, Missouri
Paul Quinn College, Texas
Pennsylvania Military College, Pennsylvania
Pikeville College, Kentucky
Providence-Barrington Bible College Rhode Island
Regis College, Massachusetts
Rio Grande College, Ohio
Roberts Wesleyan College, New York
St. Francis College, New York
St. Joseph College, Connecticut
St. Mary's Dominican College, Louisiana
St. Neinrad Seminary, Indiana
St. Vincent College, Pennsylvania
Salem College, West Virginia
Sioux Falls College, South Dakota
Southwestern University, Texas
Tabor College, Kansas
Trinity College, D. C.
Union University, Tennessee
University of Buffalo, New York
University of Pittsburgh, Pennsylvania
Ursuline College, Kentucky
Washington Missionary College, D. C.
Westmont College, California
Wilberforce University, Ohio
William Penn College, Iowa

SOPHOMORES

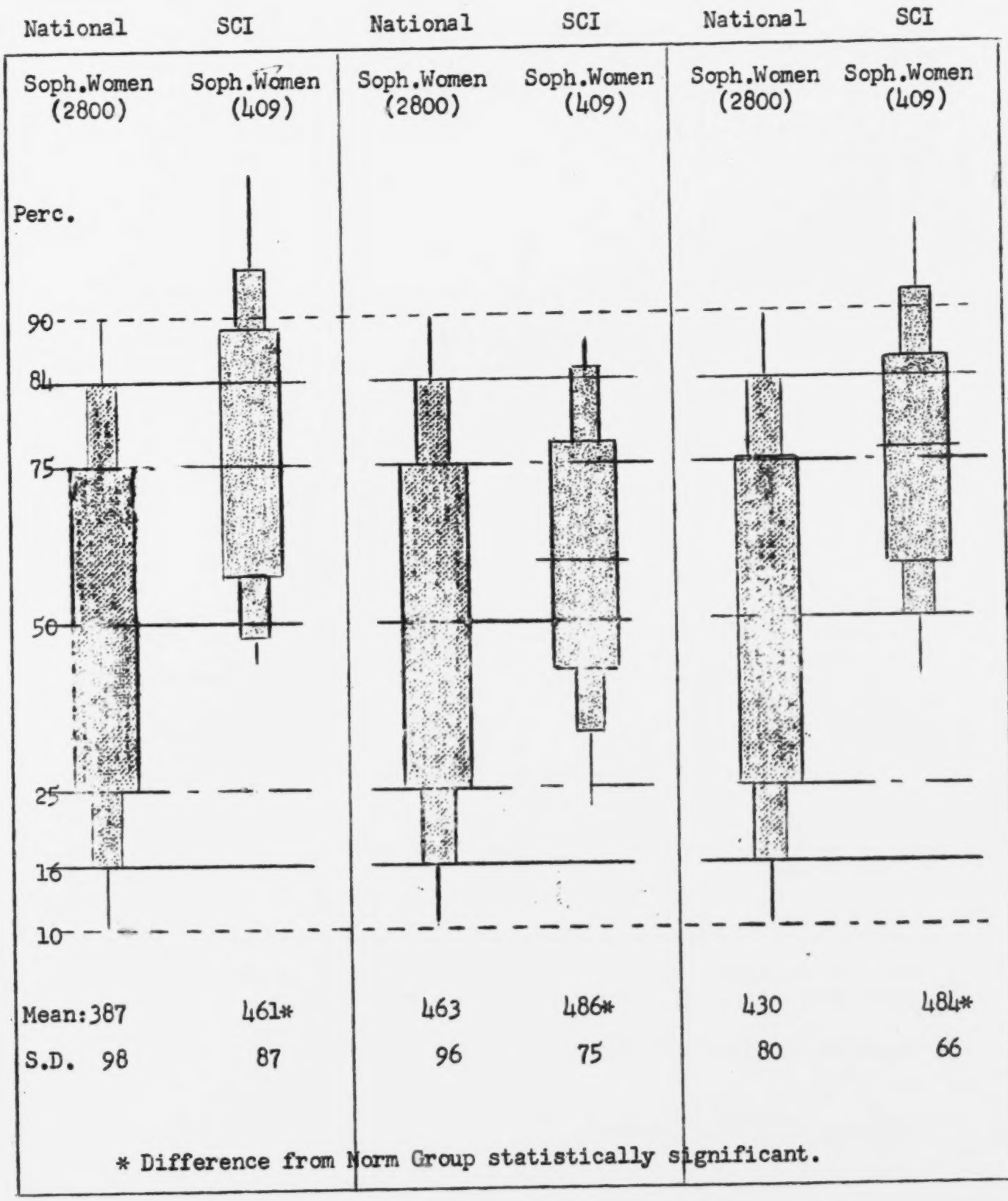
Figure 4: Comparison of Performance of SCI Sophomore Men Spring 1962 with National Norms for Sophomore Men on GRE Area Tests in



* Difference from Norm Group statistically significant.

SOPHOMORES

Figure 5: Comparison of Performance of SCI Sophomore WOMEN Spring 1962 with National Norms for Sophomore WOMEN on GRE Area Tests in



* Difference from Norm Group statistically significant.

TABLE IV

GRE: AREA TESTS
DISTRIBUTIONS OF INSTITUTIONAL MEANS FOR SOPHOMORES#
WITH LOCATION OF SCI

Scaled Score Intervals	Number of Institutions with Means in the Scaled Score Intervals Given at the Left		
	Social Science	Humanities	Natural Science
560-579		1	
540-559		0	
520-539		1	
500-519		3	3
480-499	1	6	3**
460-479	1**	6**	6
440-459	5	9	18
420-439	6	13	15
400-419	9	10	13
380-399	8	12	4
360-379	18	3	2
340-359	8	0	1
320-339	5	0	2
300-319	3	2	
280-299	0	1	
260-279	1		
240-259	0		
220-239	2		
Total Number of Colleges	67	67	67
Total Number of Students	5496	5496	5496
Per Cent of Colleges Above SCI	1.5	16.4	4.5
Per Cent in Same Interval as SCI	1.5	9.0	4.5
Per Cent Below SCI	97.0	74.6	91.0

Based on colleges testing complete classes of 25 or more sophomores during the period July 1, 1956 through June 30, 1957.

** Interval in which SCI mean in located.

TABLE V

MEANS AND STANDARD DEVIATIONS ON (GRE), AREA TESTS,
FOR NATIONAL SENIORS, SCI SOPHOMORES, AND MID-WEST SOPHOMORES

Student Groups	No. of Students	Social Science		Humanities		Natural Science	
		Mean	S.D.	Mean	S.D.	Mean	S.D.
NATIONAL SENIORS							
Men	8616	451	106	438	97	471	99
Women	6069	419	106	479	103	431	82
Total	14685	438	107	455	101	454	95
SCI SOPHOMORES							
Men	342	465	91	447	79	510	70
Women	409	461	87	486	75	484	66
Total	751	463	89	468	79	496	69
MID-WEST SOPHOMORES							
Men and Women	1585	408	94	436	83	473	80

TABLE VI

DIFFERENCES IN MEAN SCORES BETWEEN VARIOUS GROUPS ON (GRE) AREA TESTS

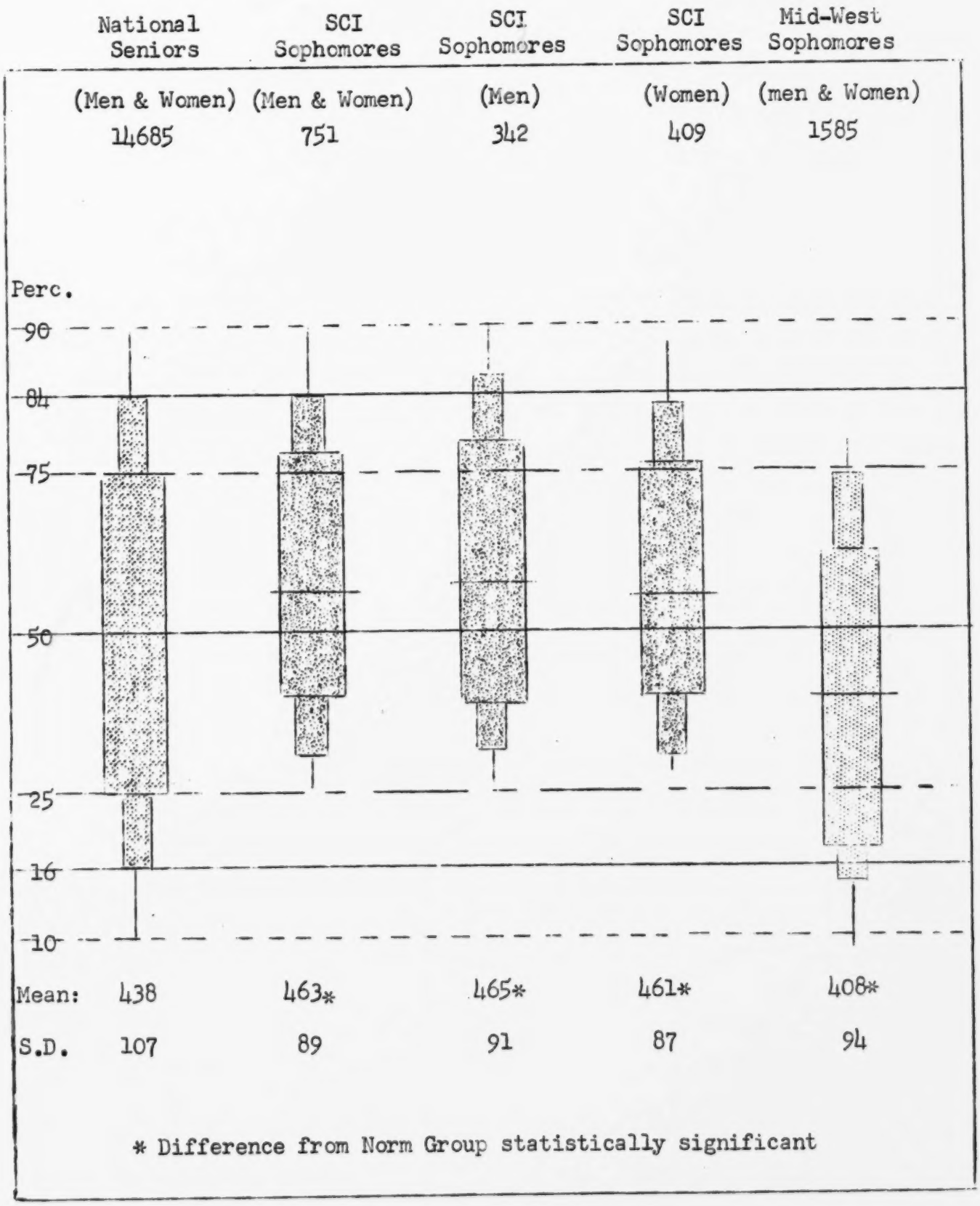
Groups Compared	Social Science			Humanities			Natural Science		
	Mean-A	Mean-B	Diff	Mean-A	Mean-B	Diff	Mean-A	Mean-B	Diff
A-SCI Soph. Men B-Nat'l Soph. Men	465	396	69*	447	411	36*	510	459	51*
A-SCI Soph. Women B-Nat'l Soph. Women	461	387	74*	486	463	23*	484	430	54*
A-SCI Soph. (M & W) B-Nat'l Soph. (M & W)	463	392	71*	468	437	31*	496	444	52*
A-SCI Soph. (M & W) B-Midwest Soph (M&W)	463	408	55*	468	436	32*	496	473	23*
A-SCI Soph. Men B-Nat'l Soph. (M&W)	465	392	73*	447	437	10	510	444	66*
A-SCI Soph. Women B-Nat'l Soph. (M&W)	461	392	69*	486	437	49*	484	444	40*
A-SCI Soph. Men B-Nat'l Senior Men	465	451	14*	447	438	9	510	471	39*
A-SCI Soph. Women B-Nat'l Senior Women	461	419	49*	486	479	7	484	431	53*
A-SCI Soph. (M&W) B-Nat'l Senior (M&W)	463	438	25*	468	455	13	496	454	32*
A-SCI Soph. Men B-Nat'l Senior (M&W)	465	438	27*	447	455	-8	510	454	56*
A-SCI Soph. Women B-Nat'l Senior (M&W)	461	438	23*	486	455	31*	484	454	30*
A-Midwest Soph. B-Nat'l Soph.	408	392	16*	436	437	-1	473	444	29*
A-Midwest Soph. B-Nat'l Seniors	408	438	-30*	436	455	-19*	473	454	19*

*Differences between mean scores large enough to be statistically significant.

SOPHOMORES

Figure 6: Graduate Record Examinations Area Test in SOCIAL SCIENCE

Comparison of Performance of SCI Sophomores Spring 1962
and Mid-West Sophomores Spring 1961 with National Norms for Seniors

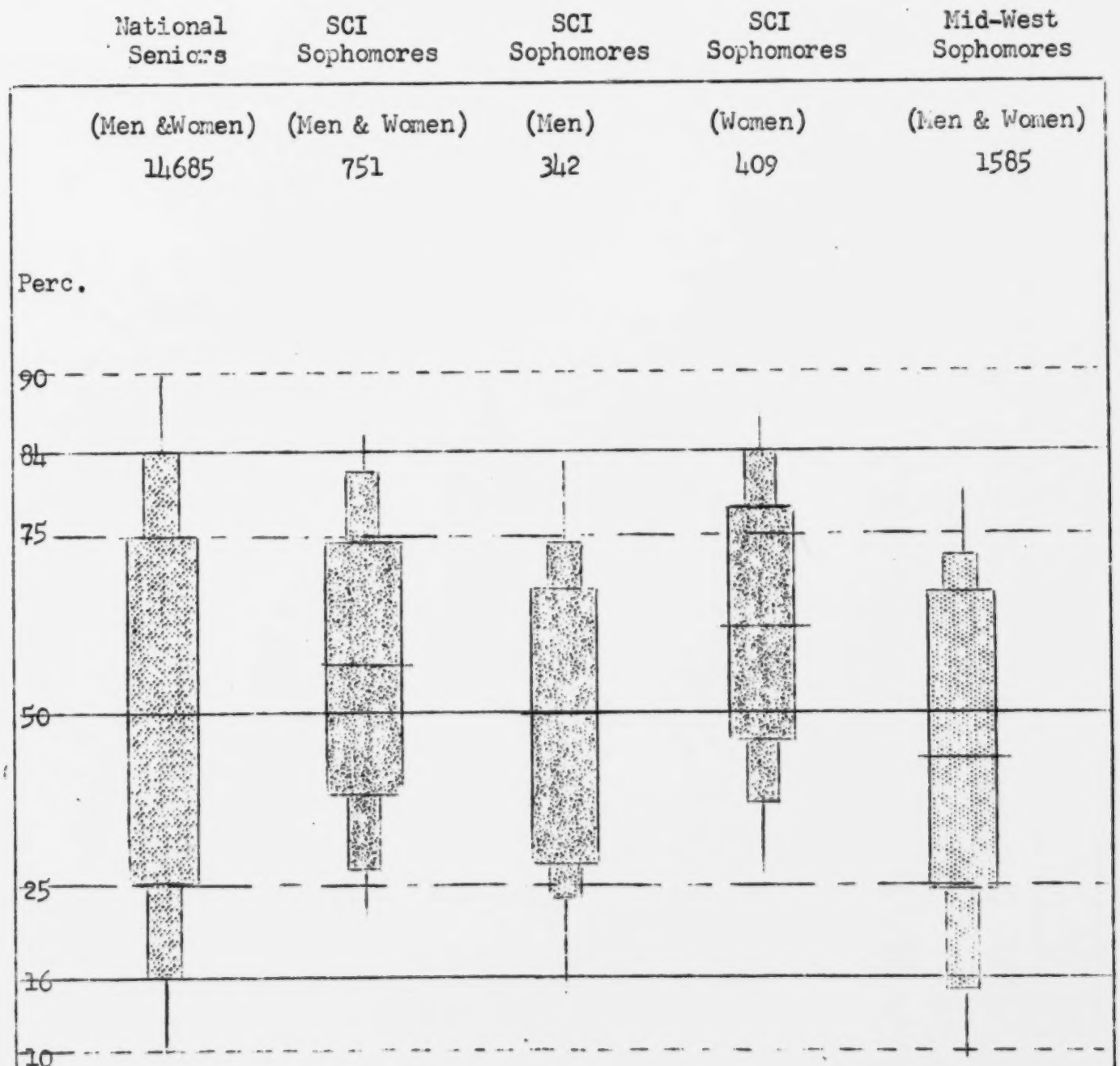


* Difference from Norm Group statistically significant

SOPHOMORES

Figure 7: Graduate Record Examinations Area Test in HUMANITIES

Comparison of Performance of SCI Sophomores Spring 1962
and Mid-West Sophomores Spring 1961 with National Norms for Seniors

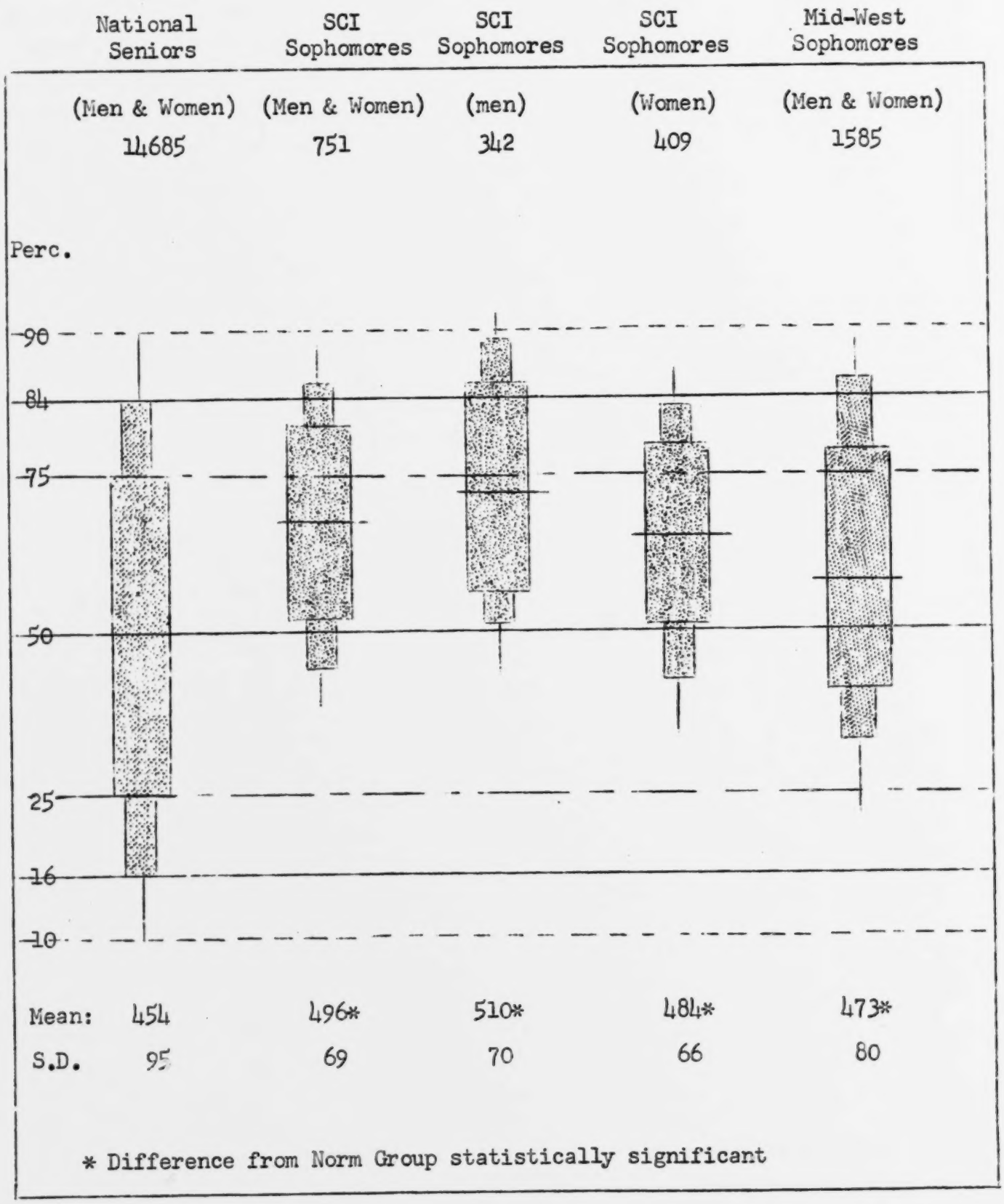


* Difference from Norm Group statistically significant

SOPHOMORES

Figure 8: Graduate Record Examinations Area Test in NATURAL SCIENCE

Comparison of Performance of SCI Sophomores Spring 1962
and Mid-West Sophomores Spring 1961 with National Norms for Seniors



* Difference from Norm Group statistically significant

TABLE VII

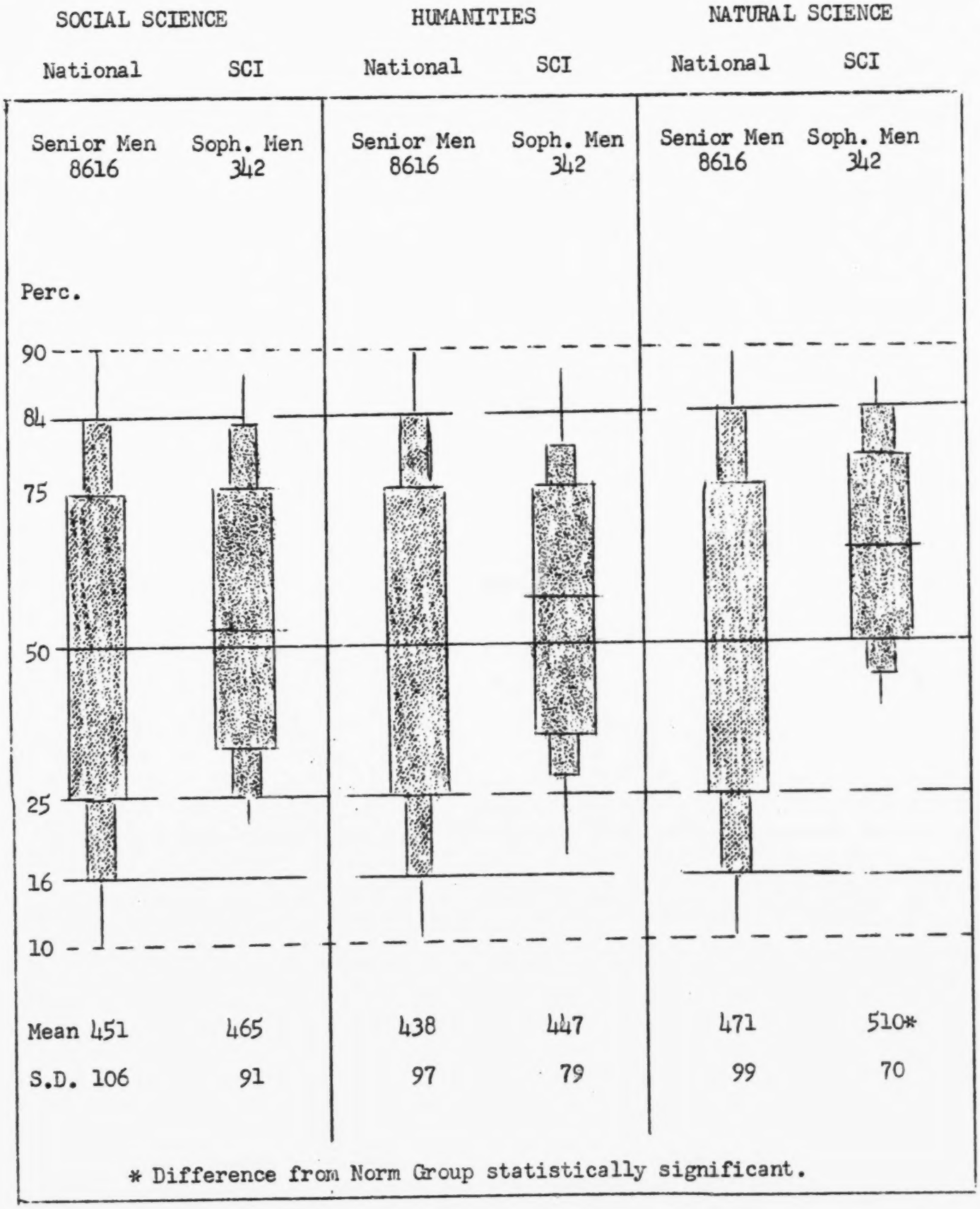
GRE: AREA TESTS

NATIONAL PERCENTILE EQUIVALENTS OF SCALED SCORES
BASED ON SCORES SECURED BY 14,685 SENIORS TESTED 1956-1957

Scaled Scores	Social Science			Humanities			Natural Science		
	Men	Women	Total	Men	Women	Total	Men	Women	Total
720					99		99		
700	99			99	98	99	98		99
680	98		99	98	96	98	97		98
660	97	99	98	98	95	97	96	99	97
640	96	98	97	96	92	94	93	98	95
620	93	96	94	95	89	93	91	97	93
600	90	95	92	92	84	89	86	95	90
580	87	92	89	90	81	86	83	94	88
560	83	89	86	88	77	83	78	91	84
540	77	85	80	83	70	78	73	87	79
520	72	81	76	80	65	74	68	84	74
500	66	75	69	73	57	66	61	78	68
480	60	70	64	67	50	60	56	73	63
460	52	64	57	62	44	55	48	66	55
440	46	58	51	53	35	45	43	59	50
420	38	50	43	47	29	39	35	49	41
400	32	44	37	36	22	30	28	41	34
380	25	36	30	29	17	24	20	30	24
360	21	30	25	19	11	16	12	19	15
340	15	23	18	14	8	12	8	13	10
320	11	18	14	9	5	7			
300	7	14	10	4	3	3			
280	5	10	7	2	1	2			
260	3	6	4						
240	1	3	2						
220	1	2	1						
200									
Mean	451	419	438	438	479	455	471	431	454
S.D.	106	106	107	97	103	101	99	82	95
No. of Students	8,616	6,069	14,685	8,616	6,069	14,685	8,616	6,069	14,685

SOPHOMORES

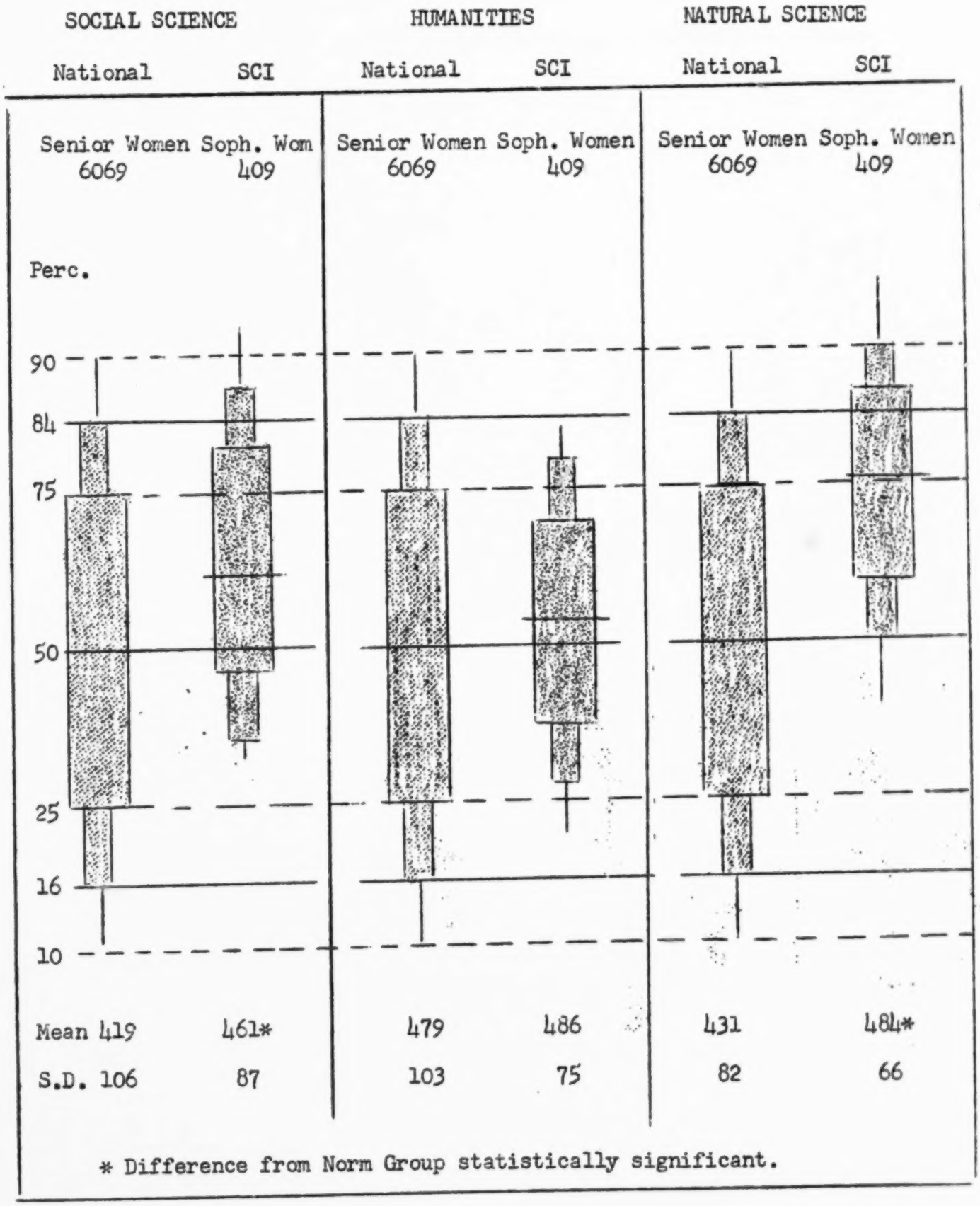
Figure 9: Comparison of Performance of SCI Sophomore Men Spring 1962 With National Norms for Senior Men on GRE Area Tests in



* Difference from Norm Group statistically significant.

SOPHOMORES

Figure 10: Comparison of Performance of SCI Sophomore Women Spring 1962 With National Norms for Senior Women on GRE Area Tests in



* Difference from Norm Group statistically significant.

TABLE VIII

GRE: AREA TESTS

DISTRIBUTIONS OF INSTITUTIONAL MEANS FOR SENIORS
WITH LOCATION OF SCI MEANS FOR SOPHOMORES

Scaled Score Intervals	Number of Institutions with Means in the Scaled Score Intervals Given at the Left		
	Social Science	Humanities	Natural Science
600-619		1	
580-599	1	0	1
560-579	0	2	1
540-559	0	4	1
520-539	3	13	3
500-519	7	14	8
480-499	13	20	19**
460-479	15**	21**	32
440-459	25	27	31
420-439	28	13	24
400-419	24	20	21
380-399	18	10	10
360-379	9	7	6
340-359	6	2	4
320-339	2	4	
300-319	3	2	
280-299	1	1	
260-279	4		
240-259	1		
220-239	1		
200-219			
Total Number of Colleges	161	161	161
Total Number of Students	14277	14277	14277
Per Cent of Colleges Above SCI	14.9	33.5	8.7
Per Cent in Same Interval as SCI	9.3	13.1	11.8
Per Cent Below SCI	75.8	53.4	79.5

*Based on colleges testing complete classes of 25 or more seniors during the period July 1, 1956 through June 30, 1957.

**Interval in which SCI mean in located.

INSTITUTIONS COMPRISING SENIOR NATIONAL NORM GROUP

GRADUATE RECORD EXAMINATIONS INSTITUTIONAL TESTING PROGRAM 1956-57
COLLEGES AND UNIVERSITIES ADMINISTERING AREA TESTS TO SECOND-SEMESTER SENIORS

Adams State College, Colorado
Albright College, Pennsylvania
Antioch College, Ohio
Ashland College, Ohio
Assumption College, Massachusetts
Augsburg College, Minnesota
Barry College, Florida
Bellarmine College, Kentucky
Belmont Abbey College, North Carolina
Belmont College, Tennessee
Bessie Tift College, Georgia
Bethany College, West Virginia
Bethel College, Kansas
Bethel College, Minnesota
Blackburn College, Illinois
Bob Jones University, South Carolina
Butler College, Texas
Cardinal Stritch College, Wisconsin
Central College, Iowa
Centre College of Kentucky, Kentucky
Chapman College, California
Chatham College, Pennsylvania
Chestnut Hill College, Pennsylvania
Coker College, South Carolina
College of Idaho, Idaho
College of Mount St. Joseph-on-the Ohio, Ohio
College of Notre Dame, California
College of Notre Dame of Maryland
College of Puget Sound, Washington
College of St. Catherine, Minnesota
College of St. Joseph on the Rio Grande, New Mexico
College of St. Mary of the Springs, Ohio
College of St. Scholastica, Minnesota
College of St. Thomas, Minnesota
College of Steubenville, Ohio
Colorado College, Colorado
Columbia College, South Carolina
Conception Seminary, Missouri
Delaware State College, Delaware
Detroit Institute of Technology, Michigan
Dickinson College, Pennsylvania
Doane College, Nebraska
Dominican College of San Rafael, California
Dunbarton College of the Holy Cross, D. C.
Duquesne University, Pennsylvania
East Texas Baptist College, Texas
Eastern Baptist College, Pennsylvania
Eastern Mennonite College, Virginia
Eastern Nazarene College, Massachusetts
Elon College, North Carolina
Findlay College, Ohio
Furman University, South Carolina
Gallaudet College, District of Columbia
Gannon College, Pennsylvania
Geneva College, Pennsylvania
George Pepperdine College, California
George Washington University, District of Columbia
Georgian Court College, New Jersey
Gordon College, Massachusetts
Hampden-Sydney College, Virginia
Harding College, Arkansas
Hillyer College, Connecticut
Huntington College, Indiana
Immaculate Heart College, California
Iona College, New York
John Brown University, Arkansas
Kansas Wesleyan University, Kansas
King College, Tennessee
King's College, New York
LaGrange College, Georgia
Lake Erie College, Ohio
Lander College, South Carolina
Lehigh University, Pennsylvania
Livingstone College, North Carolina
Long Beach State College, California
Macalester College, Minnesota
Manchester College, Indiana
Marycrest College, Iowa
Marymount College (Tarrytown), New York

SENIOR NATIONAL NORM GROUP (CONTINUED)

McNeese State College, Louisiana
Mercy College, Michigan
Merrimack College, Massachusetts
Miami University, Ohio
Miles College, Alabama
Milligan College, Tennessee
Milton College, Wisconsin
Montreat College, North Carolina
Morehouse College, Georgia
Morgan State College, Maryland
Morris Harvey College, West Virginia
Mount Mercy College, Pennsylvania
Mount St. Agnes College, Maryland
Nazareth College, New York
New England College, New Hampshire
North Georgia College, Georgia
Northeast Louisiana State College
Louisiana
Northland College, Wisconsin
Northwest Christian College, Oregon
Northwestern College, Minnesota
Notre Dame College of Staten Island,
New York
Oakwood College, Alabama
Olivet College, Michigan
Our Lady of Cincinnati College, Ohio
Pacific Union College, California
Park College, Missouri
Paul Quinn College, Texas
Pennsylvania Military College,
Pennsylvania
Philander Smith College, Arkansas
Piedmont College, Georgia
Providence-Barrington Bible College,
Rhode Island
Randolph-Macon College, Virginia
Roanoke College, Virginia
Roberts Wesleyan College, New York
Rosemont College, Pennsylvania
St. Ambrose College, Iowa
St. Anselm's College, New Hampshire
St. Augustine's College, North Carolina
St. Edward's University, Texas
St. Francis College, New York
St. Francis College, Pennsylvania
St. John Fisher College, New York
St. Joseph College, Maryland
St. Joseph's College, Indiana
St. Mary of the Woods College,
Indiana
St. Mary's Dominican College,
Louisiana
St. Mary's Seminary and University,
Maryland
St. Meinrad Seminary, Indiana
St. Michael's College, Vermont
St. Procopius College, Illinois
St. Vincent College, Pennsylvania
Salem College, West Virginia
Shelton College, New Jersey
Shorter College, Georgia
Siena Heights College, Michigan
Sioux Falls College, South Dakota
Southern Missionary College, Tennessee
Southern State College, Arkansas
Southwestern University, Texas
Tabor College, Kansas
Union College, Nebraska
University of Bridgeport, Connecticut
University of Detroit, Michigan
University of New Mexico, New Mexico
University of Pittsburgh, Pennsylvania
University of Redlands, California
University of St. Thomas, Texas
University of Tampa, Florida
Ursuline College, Kentucky
Villa Madonna College, Kentucky
Virginia Union University, Virginia
Washington Missionary College,
District of Columbia
Wayland Baptist College, Texas
Waynesburg College, Pennsylvania
West Virginia Wesleyan College,
West Virginia
Westmont College, California
Wheaton College, Illinois
Wilberforce University, Ohio
William Carey College, Mississippi
Winthrop College, South Carolina
Yeshiva University, New York

TABLE IX

GRADUATE RECORD EXAMINATIONS: THE AREA TESTS

Percentile Equivalents for Mean Scores Secured Spring 1962 by State College of Iowa Sophomores Grouped According to Majors
In Terms of National Norms for 5611 Sophomores and for 14,685 Seniors

SCI Student Groups	Number of Cases	5611 National Sophomores			14685 National Seniors		
		Social Science	Humani-ties	Natural Science	Social Science	Humani-ties	Natural Science
ALL SOPHOMORES	751	74	65	70	58	57	67
MEN							
All Sophomore Men	342	74	56	75	59	49	71
Pre-Professional	4	87	76	81	73	69	77
No Major Declared	121	68	52	72	51	44	69
Art	9	62	70	67	45	62	64
Business Education	39	74	46	65	59	39	62
Elementary Educ.	6	83	82	71	68	72	68
Jr. H.S. Educ.	12	76	55	79	61	47	75
English	11	85	82	60	71	76	57
Industrial Arts	6	57	50	69	39	42	66
Languages	4	90	81	79	79	75	75
Mathematics	36	76	56	85	61	48	82
Music	10	73	72	74	56	64	70
Physical Educ.	19	66	39	65	49	33	62
Science	28	83	62	92	68	54	88
Social Science	30	94	66	80	85	58	76
Speech	3	24	20	37	13	17	35
Speech Correction	3	55	30	71	37	26	68
WOMEN							
All Sophomore Women	409	73	70	67	57	62	64
No Major Declared	44	57	59	55	39	52	53
Art	10	74	81	61	58	75	58
Business Educ.	32	70	56	59	54	49	56
Elementary Educ.	40	74	70	65	59	62	62
Jr. H.S. Educ.	18	82	66	70	67	58	67
Kg.-Prim. Educ.	116	69	69	65	52	61	62
English	30	79	82	69	64	76	66
Home Economics	16	75	73	76	59	65	72
Languages	13	78	82	72	63	76	69
Library Science	5	95	91	88	88	86	84
Mathematics	8	92	66	80	81	58	77
Music	17	67	76	73	50	68	60
Physical Educ.	21	70	60	66	53	53	63
Science	11	70	70	93	53	62	89
Social Science	17	97	82	79	90	76	76
Speech Correction	10	80	66	63	65	58	60

TABLE X

GRADUATE RECORD EXAMINATIONS: THE AREA TESTS

Percentile Equivalents of Mean Scores Secured Spring, 1962 by State College of Iowa Sophomores Grouped According to Majors In Terms of National Norms for Sophomores and for Seniors of Same Sex

SCI Student Groups	Number of Cases	Sophomore Norms			Senior Norms		
		Social Science	Humani-ities	Natural Science	Social Science	Humani-ities	Natural Science
MEN							
All Sophomore Men	342	73	68	69	54	56	65
Pre-Professional	4	86	86	76	70	76	71
No Major Declared	121	66	64	66	46	52	62
Art	9	61	80	61	40	69	57
Business Educ.	39	73	52	59	54	47	55
Elementary Educ.	6	82	90	65	65	81	61
English	11	84	91	53	68	82	50
Jr. H.S. Educ.	12	75	67	74	56	55	69
Industrial Arts	6	55	62	63	34	50	59
Languages	4	89	90	74	76	81	69
Mathematics	36	75	68	81	56	56	76
Music	10	71	83	68	51	71	64
Physical Educ.	19	64	49	59	44	40	55
Science	28	82	74	88	65	62	83
Social Science	30	93	77	75	82	65	70
Speech	3	24	26	32	10	21	29
Speech Correction	3	53	40	65	32	31	61
WOMEN							
All Soph. Women	409	75	59	74	64	52	74
No Major Declared	44	59	48	62	46	41	63
Art	10	76	74	68	65	67	68
Business Educ.	32	72	45	66	61	38	67
Elementary Educ.	40	76	59	72	65	52	72
English	30	80	75	76	70	68	76
Jr. H.S. Educ.	18	83	55	77	73	48	77
Kg.-Prim. Educ.	116	71	58	72	59	51	72
Home Economics	16	76	63	82	66	56	82
Languages	13	79	75	79	69	68	79
Library Science	5	96	87	92	91	81	91
Mathematics	8	93	55	86	86	48	86
Music	17	69	66	70	57	59	71
Physical Educ.	21	72	49	73	60	42	73
Science	11	72	59	95	60	52	94
Social Science	17	97	75	85	93	68	85
Speech Correction	10	81	56	70	71	48	71

PART II

SOPHOMORES

ADVANCED TESTS, GRADUATE RECORD EXAMINATIONS

Sophomore students at the State College of Iowa were tested with the Advanced Tests, Graduate Record Examinations. The Advanced Tests were used with the sophomores to establish base lines for measures of subsequent growth. Part II shows the performance of sophomores on the Advanced Tests. The sophomores are compared with National Senior Norms and State College of Iowa Seniors.

The following Advanced Tests were available:

Biology
Chemistry
Education
French
History
Literature
Mathematics
Music
Physics
Spanish
Speech

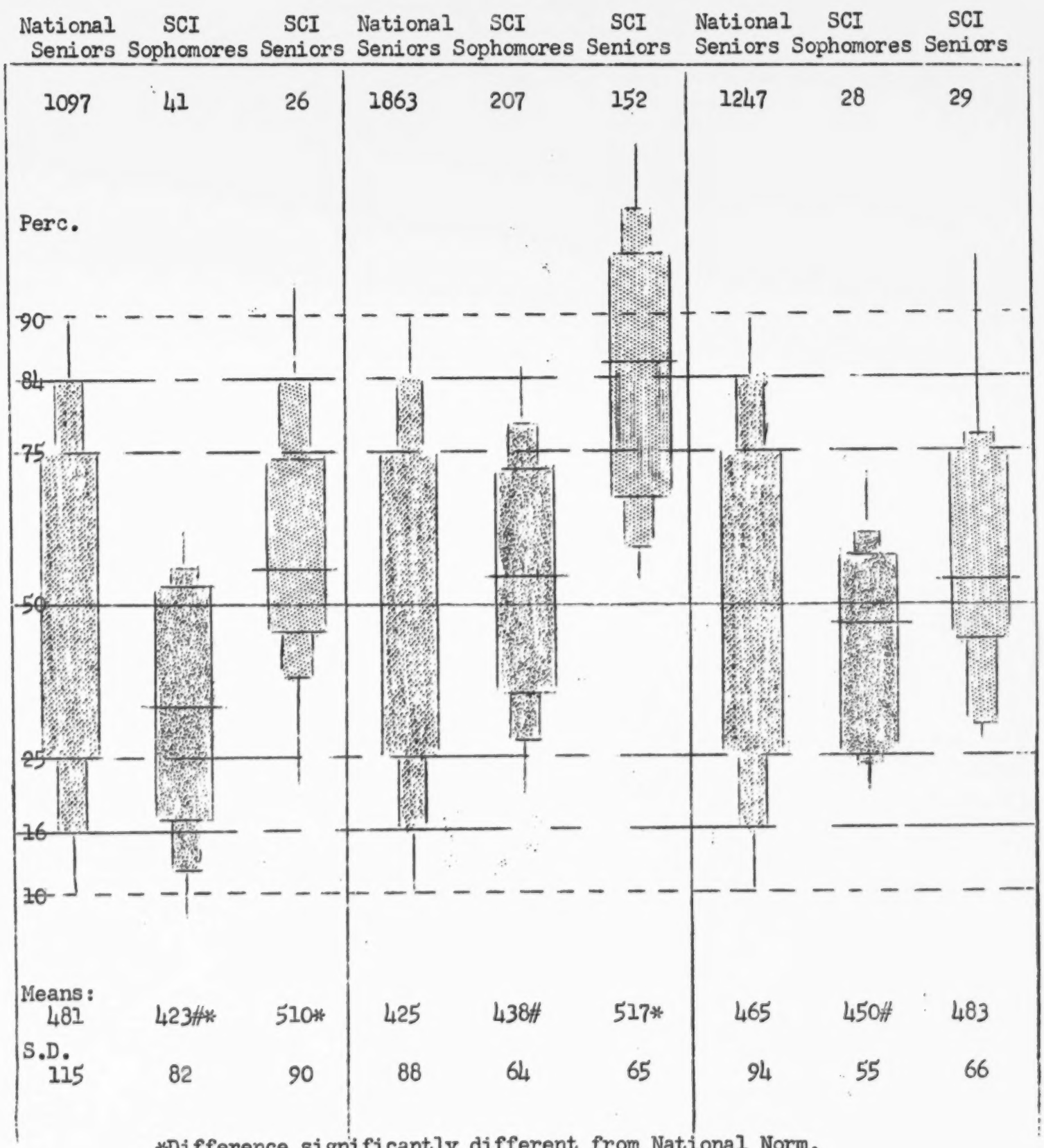
The following subject area tests were selected from the Teaching Field Tests, TEACHER EDUCATION EXAMINATION PROGRAM, Educational Testing Service:

Social Studies
Industrial Arts

In the area of Business Education, a test in Business Fundamentals and one in Bookkeeping were selected from the Business Education Testing Program of the Joint Committee on Tests, United Business Education Association (NEA), Washington, D.C.

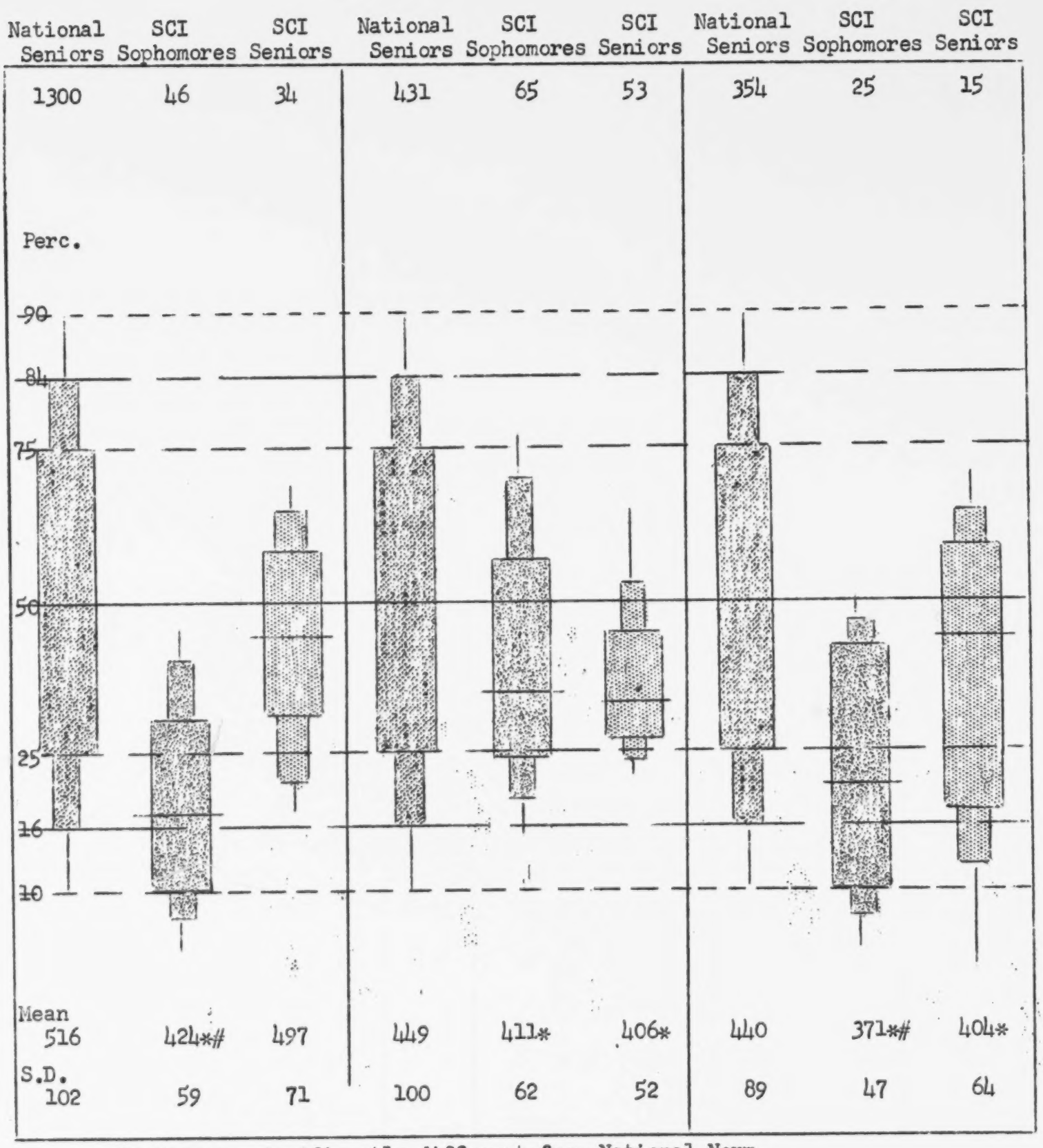
NOTE: When the number of students in an area dropped below 15, test results have not been graphed.

Figure 11: Comparison of Performance of SCI Sophomores and SCI Seniors With National Norms for Seniors on GRE Advanced Tests in



*Difference significantly different from National Norm.
#Difference significantly different from SCI Seniors.

Figure 12: Comparison of Performance of SCI Sophomores and SCI Seniors With National Norms for Seniors on GRE Advanced Tests in



*Difference significantly different from National Norm.
#Difference significantly different from SCI Seniors.

TABLE XI

DISTRIBUTION OF SCORES FOR STATE COLLEGE OF IOWA SOPHOMORES
ON ADVANCED TESTS, GRADUATE RECORD EXAMINATIONS
NATIONAL PERCENTILE EQUIVALENTS FOR GIVEN SCALED SCORES BASED ON SENIORS

Scaled Score	Advanced Tests									
	Biol.	Chem.	Educ.	French	Hist.	Lit.	Math.	Music	Physics	Speech
	% F	% F	% F	% F	% F	% F	% F	% F	% F	% F
760		99					99		99	
740	99	98		99		99	98		97	
720	98	97		96		98	98		97	
700	96	96		95	99	99	97		95	
680	94	95		94	98	98	97		94	
660	92	93		93	98	91	97	99	91	99
650			1							
640	89	90		92	96	87	96	98	90	98
630	1		1							
620	86	87	99	89	94	83	94	97	88	97
610	1		1							
600	83	84	98	83	90	77	93	94	85	94
590			1		1					
580	79 1	79	95 3	80	87	70 1	89	92	83	91
570			2			1				
560	75	72	93 2	76	83	65	86	88	79	87
550			4		1		3			1
540	69	67	89 2	72	78	58	84	84	73	79
530			3				1			
520	63 1	59	84 3	65	71 1	49	78 2	80	67	74
510	2		4			2	1			
500	67	53	78 9	57	64 1	43 2	73 1	75	65	64
490	5		7		2	2	4			
480	50	45 1	71 16	49	56 4	35 1	66 2	71	62	57
470	1		11		2	1		1		
460	43	35	64 11	35	47 2	29 2	58 2	63	55 1	51 1
450	4	1	13		2	2	1			
440	37 2	28 1	54 13	25	41 1	23 5	50 1	54 1	48	46
430	1		13		2	2	3	1	1	
420	31 3	19 1	45 10	17	31	17 3	41 2	43 3	36	36
410	2		11			2	4	2		1
400	24 2	14 1	36 12	13	24 5	12 6	34 6	33	29	29
390	2	5	13		1	1	4	1	1	1
380	20 1	10 1	28 6	9	18 1	9 3	27 5	25	28	27 1
370	1		7	1		3	7	4	2	1
360	15 2	5	21 5	6 1	13 2	6 3	20 5	16 4	20 3	21
350	2		7			1	4			
340	10 2	2	15 4	4 1	8	4 1	11 3	11	4	17
330	1		3	1			2	4		
320	6		11 2	3	4	2	2	5 2		15 1
310	1		4			2				1
300	4		8 1	2 1	3	1		3 1		9
290	1		1							
280	2 1		5 1	1	1	1		1 1		7
260	1		3							5
250										1
240			2							3
230	1									
220			1							1
Total	41	13	207	6	28	46	65	25	12	9

TABLE XII

COMPARISON OF PERFORMANCE OF SCI SOPHOMORES WITH SCI SENIORS AND WITH NATIONAL NORMS FOR SENIORS ON ADVANCED TESTS OF THE GRADUATE RECORD EXAMINATIONS

Advanced Test	Number of Students		Mean Scores			Difference Between SCI Senior and Soph.		
	SCI Soph.	SCI Seniors	National Senior	SCI Soph.	Diff.	SCI Senior	SCI Soph.	Diff.
Chemistry	13	12	501	400	101*	498	400	98*
Biology	41	26	481	423	58*	510	423	87*
Education	207	152	425	438	13	517	438	79*
History	28	29	465	450	15	483	450	33*
Literature	46	34	516	424	92*	497	424	73*
Mathematics	65	53	449	411	38*	406	411	- 5
Music	25	15	440	371	69*	404	371	33*
Physics	12	8	470	372	98*	399	372	27
Speech	9	5	444	382	62*	544	382	162*
TEEP PROGRAM TEACHING FIELD								
Industrial Arts	10	19	21.6	18.0	3.6	21.8	18.0	3.8
Social Science	41	11	19.9	20.2	0.3	23.0	20.2	2.8

* Differences are sufficiently large to be statistically significant.

NOTE: Graphs have not been constructed for performance in Advanced Tests if the number of students taking the test was below 15.

State College of Iowa Business Education majors made a median scone on the Business Fundamentals Test equivalent to the national 75th percentile.

The median score for State College of Iowa sophomores on the Bookkeeping Test was equivalent to the national 17th percentile.

COLLEGES AND UNIVERSITIES COMPRISING THE NORMS GROUP
FOR THE TEEP GENERAL PROFESSIONAL EXAMINATION
TESTS ADMINISTERED DURING THE PERIOD
FEBRUARY THROUGH MAY, 1957

State University College for Teachers, Albany, New York
Alderson-Broaddus College, West Virginia
Arkansas State Teachers College, Conway, Arkansas
Bishop College, Marshall, Texas
State Teachers College, Bloomsburg, Pennsylvania
Bowling Green State University, Bowling Green, Ohio
State University Teachers College, Brockport, New York
State University for Teachers, Buffalo, New York
State University Teachers College, Cortland, New York
Danbury State Teachers College, Danbury, Connecticut
De Paul University, Chicago, Illinois
Franklin and Marshall College, Lancaster, Pennsylvania
State University Teachers College, Fredonia, New York
State University Teachers College, Geneseo, New York
University of Illinois, Urbana, Illinois
Lenoir-Rhyne College, Hickory, North Carolina
State Teachers College, Lock Haven, Pennsylvania
Macalester College, St. Paul, Minnesota
Marymount College, Los Angeles, California
Millsaps College, Jackson, Mississippi
State University Teachers College, New Palta, New York
Newton College of the Sacred Heart, Newton, Massachusetts
State University Teachers College, Oneonta, New York
State University Teachers College, Oswego, New York
State University Teachers College, Plattsburgh, New York
State University Teachers College, Potsdam, New York
St. John College, Cleveland, Ohio
St. Mary's College, Notre Dame, Indiana
Virginia State College, Petersburg, Virginia

PART III

SENIORS

AREA TESTS, GRADUATE RECORD EXAMINATIONS

The test scores made by State College of Iowa seniors on the Area Tests, Graduate Record Examinations are presented in Part III. Two norm groups were used in the comparisons. The national norm group was made up of 14, 685 second-semester seniors tested in the GRE Institutional Testing Program at one hundred ninety-two colleges and universities which administered the Area Tests during the period July 1, 1956 through June 30, 1957. A second norm group was made up of 1,436 seniors in seven selected midwest colleges tested in the spring of 1961.

A second presentation appears in Part III which shows the amount of change in scores on the Area Tests by those seniors in 1962 who had taken the tests as sophomores. In addition, attention was given to the group of sophomores in 1960 who dropped and did not take the tests as seniors, and to the 1962 seniors who were not enrolled in 1960 and did not take the tests as sophomores.

TABLE XIII

MEANS AND STANDARD DEVIATIONS ON GRADUATE RECORD EXAMINATIONS, AREA TESTS, FOR NATIONAL SENIORS, SCI SENIORS, AND MID-WEST SENIORS

Senior Groups	No. of Students	Social Science		Humanities		Natural Science	
		Mean	S.D.	Mean	S.D.	Mean	S.D.
NATIONAL SENIORS							
Men	8616	451	106	438	97	471	99
Women	6069	419	106	479	103	431	82
Total	14685	438	107	455	101	454	95
SCI SENIORS							
Men	273	504	104	456	86	509	89
Women	244	487	78	527	78	487	64
Total	517	496	93	489	90	499	79
MID-WEST SENIORS							
Men and Women	1436	442	91	457	87	467	79

TABLE XIV

CORRELATIONS BETWEEN GRADUATE RECORD EXAMINATIONS, AREA TESTS, AND OTHER FACTORS

Factors	Factors																	
	1			2			3			4			5			6		
	Social Science			Humanities			Natural Science			Spring Grade P.A.			Mental Ability			Reading		
	M	W	T	M	W	T	M	W	T	M	W	T	M	W	T	M	W	T
2	.51	.57	.46															
3	.50	.54	.53	.43	.51	.39												
4	.55	.53	.49	.44	.49	.49	.44	.43	.38									
5	.54	.58	.54	.54	.61	.57	.42	.46	.42	.42	.44	.44						
6	.64	.71	.64	.62	.56	.59	.54	.51	.50	.51	.51	.51	.60	.64	.63			
7	.28	.26	.16	.29	.15	.33	.32	.24	.17	.36	.42	.40	.44	.28	.35	.29	.31	.31

Code to Factors:

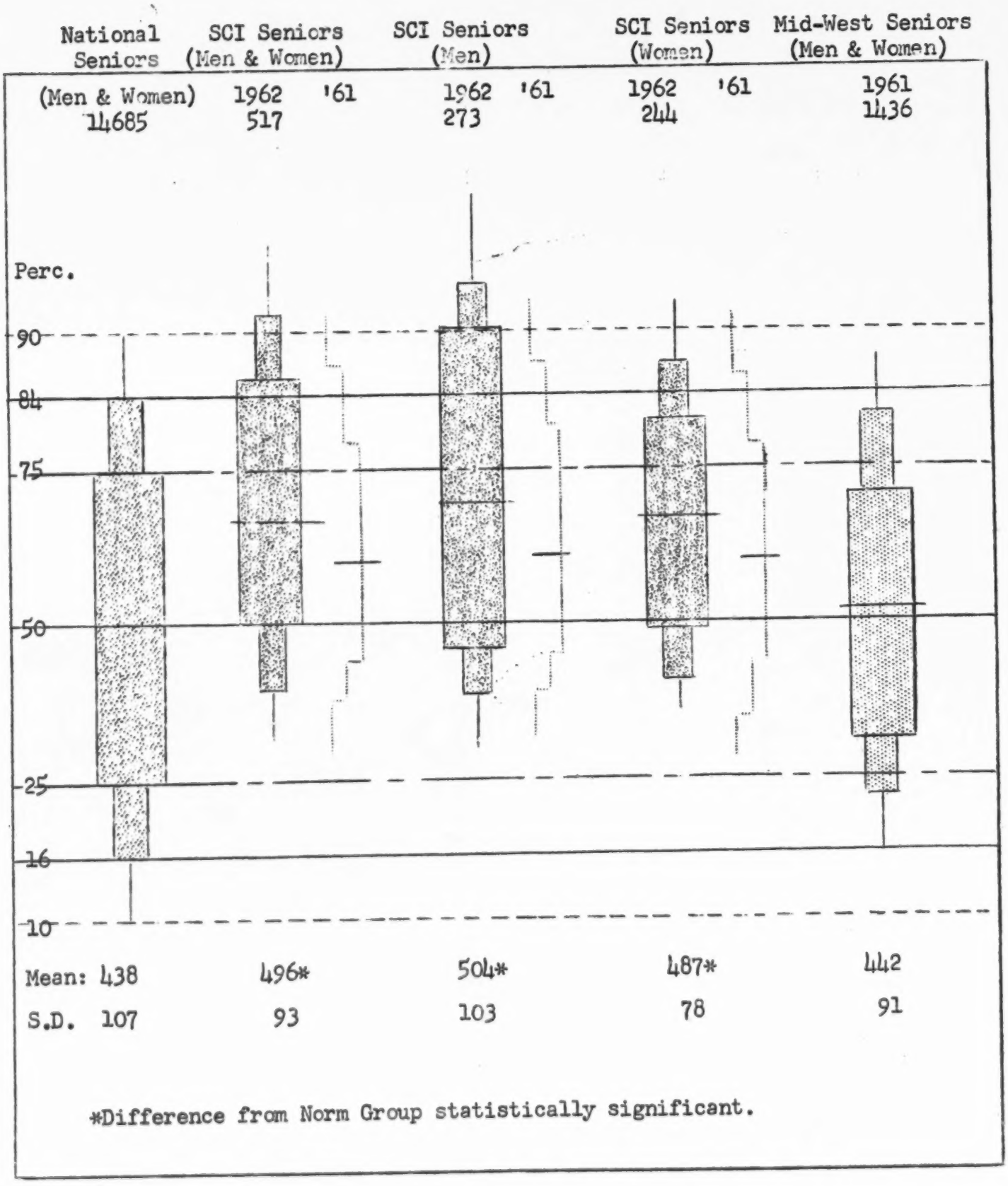
1 Social Science
2 Humanities
3 Natural Science
4 Spring Grade Point Average
5 Mental Ability
6 Reading
7 High School Decile Rank

Note: M W T in the Table refer to Men, Women, and Total.

SENIORS

Figure 13: Graduate Record Examinations Area Test in SOCIAL SCIENCE

Comparison of Performance of SCI Seniors Spring 1962
With National Norms for Seniors and With Mid-West Seniors



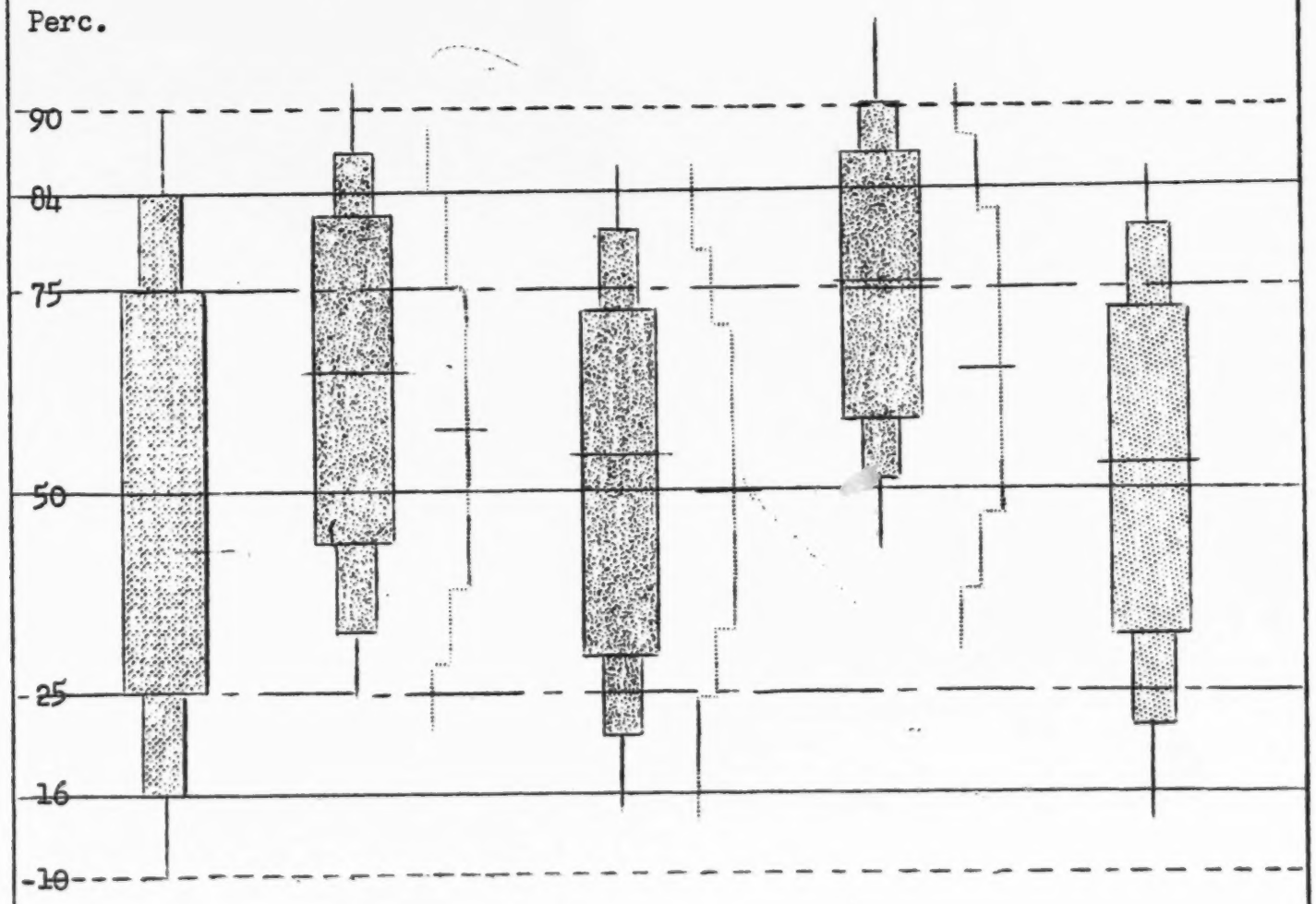
*Difference from Norm Group statistically significant.

SENIORS

Figure 14: Graduate Record Examinations Area Test in HUMANITIES

Comparison of Performance of SCI Seniors Spring 1962
With National Norms for Seniors and With Mid-West Seniors

National Seniors	SCI Seniors Men & Women		SCI Seniors Men		SCI Seniors Women		Mid-West Seniors Men & Women
Men & Women	1962	'61	1962	'61	1962	'61	1961
14685	517		273		244		1436



Mean:	455	490*	456	527*	457
S.D.	101	90	86	78	87

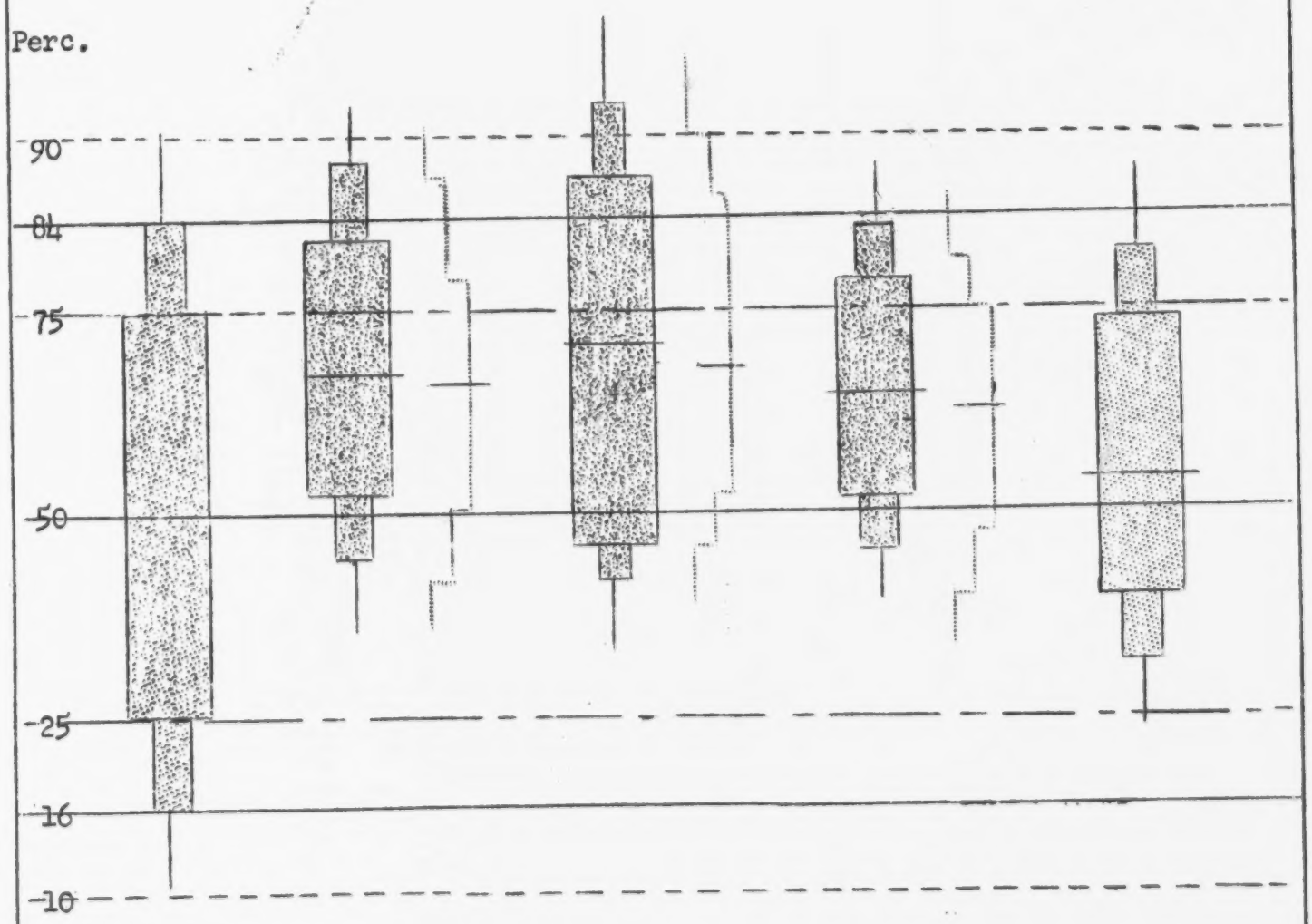
* Difference from Norm Group statistically significant.

SENIORS

Figure 15: Graduate Record Examinations Area Test in NATURAL SCIENCE

Comparison of Performance of SCI Seniors Spring 1962
With National Norms for Seniors and With Mid-West Seniors

National Seniors	SCI Seniors Men & Women		SCI Seniors Men		SCI Seniors Women		Mid-West Seniors Men & Women
Men & Women	1962	'61	1962	'61	1962	'61	1961
14685	517		273		244		1436

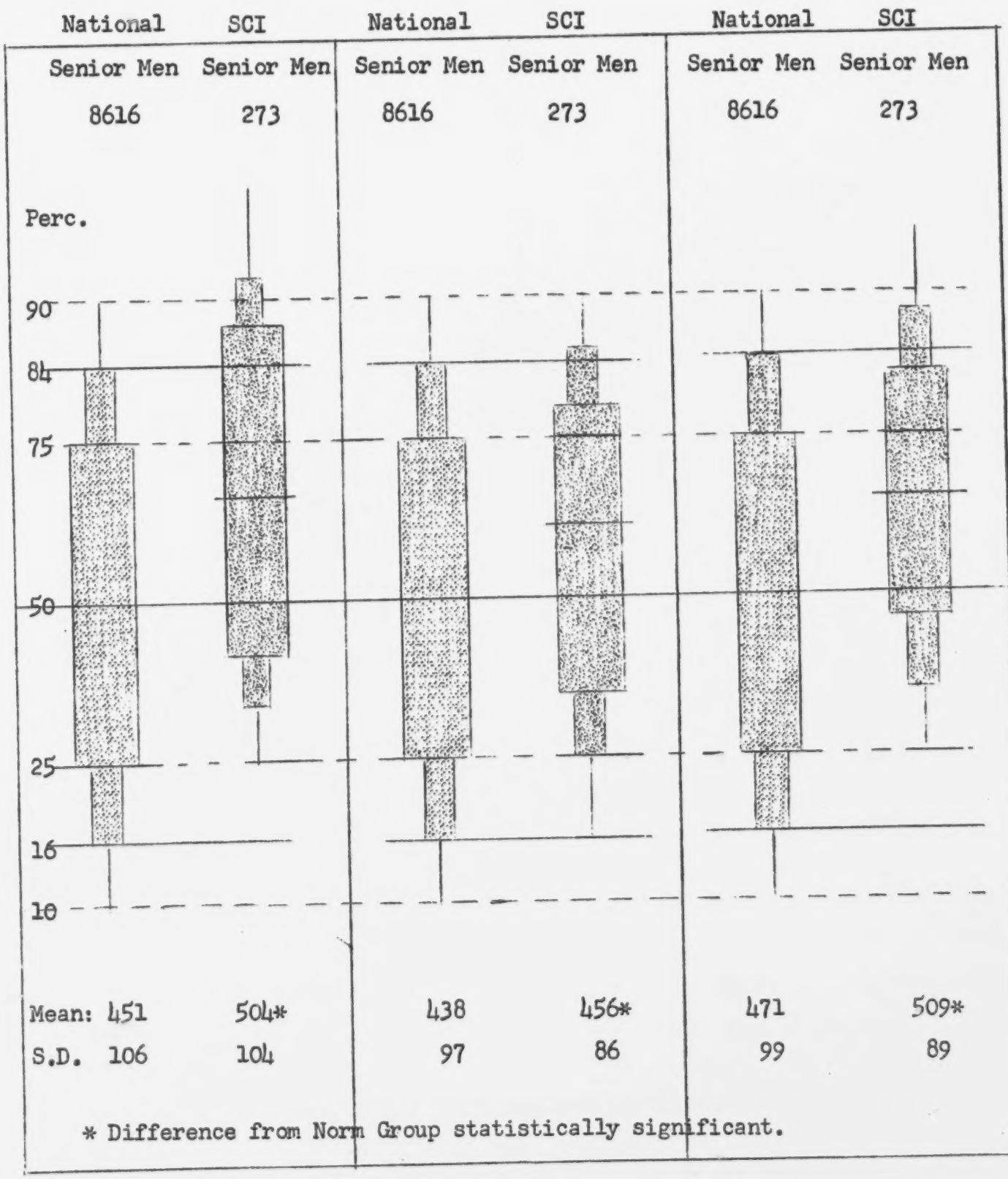


Mean:	454	499*	509*	487*	467*
S.D.	95	79	89	64	79

* Difference from Norm Group statistically significant.

SENIORS

Figure 16: Comparison of Performance of SCI Senior Men Spring 1962 With National Norms for Senior Men on GRE Area Tests [illegible]

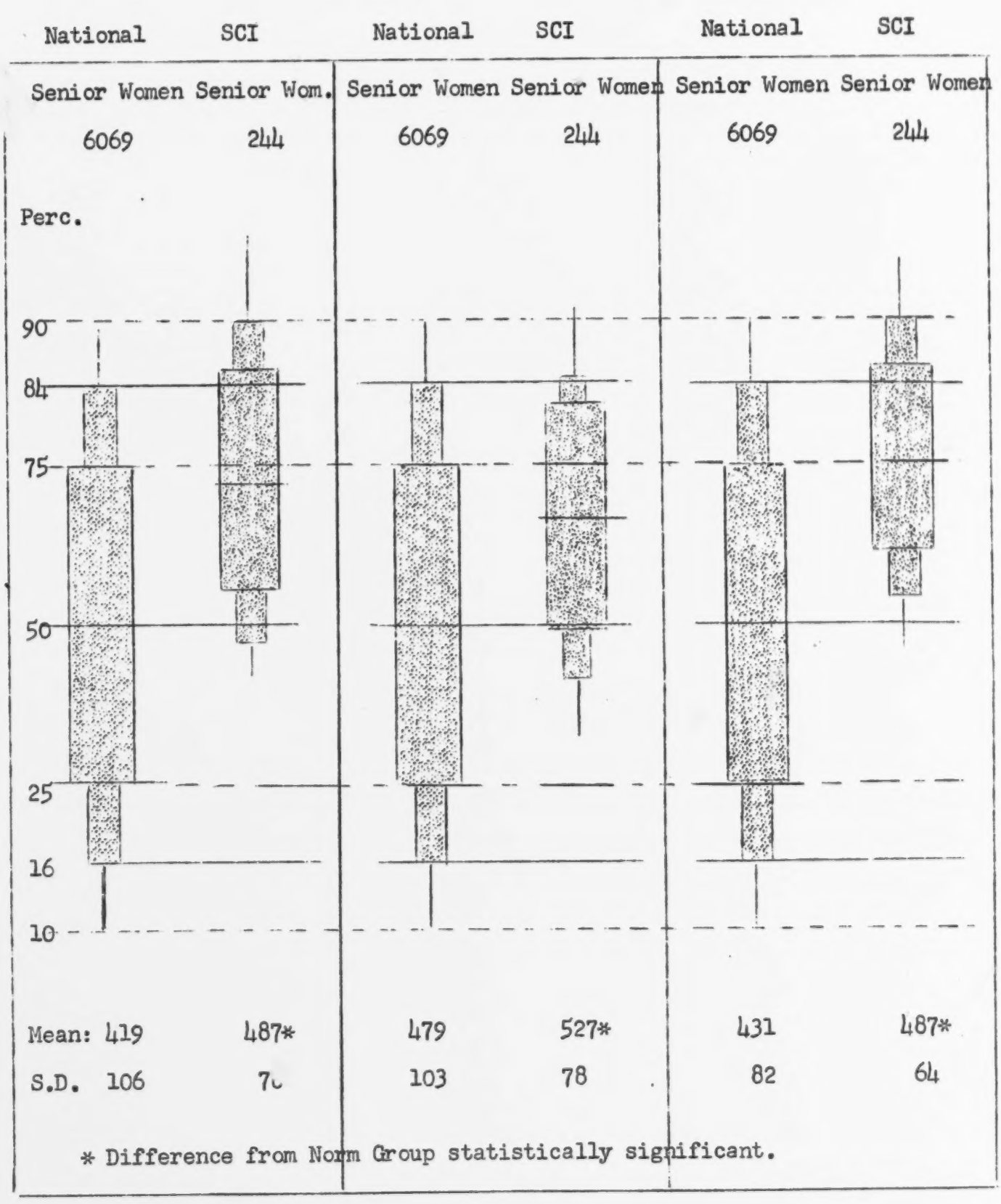


	National Senior Men	SCI Senior Men	National Senior Men	SCI Senior Men	National Senior Men	SCI Senior Men
	8616	273	8616	273	8616	273
Mean:	451	504*	438	456*	471	509*
S.D.	106	104	97	86	99	89

* Difference from Norm Group statistically significant.

SENIORS

Figure 17: Comparison of Performance of SCI Senior Women Spring 1962 With National Norms for Senior Women on GRE Area Tests in



* Difference from Norm Group statistically significant.

TABLE XV

DIFFERENCES IN MEANS BETWEEN GROUPS ON (GRE), AREA TESTS

SENIORS

Groups	Social Science			Humanities			Natural Science		
	Mean-A	Mean-B	Diff	Mean-A	Mean-B	Diff	Mean-A	Mean-B	Diff
A-SCI Senior Men B-Nat'l Senior Men	504	451	53*	456	438	18*	509	471	38*
A-SCI Senior Women B-Nat'l Senior Women	487	419	68*	527	479	48*	487	431	56*
A-SCI Seniors (M&W) B-Nat'l Seniors (M&W)	496	438	58*	490	455	35*	499	454	45*
A-SCI Seniors (M&W) B-Midwest Seniors	496	442	54*	490	457	33*	499	467	27*
A-Midwest Seniors B-National Seniors	442	438	4	457	455	2	467	454	13*
A-SCI Senior Men B-SCI Sophomore Men	504	465	39*	456	444	12	509	519	-10
A-SCI Senior Women B-SCI Sophomore Women	487	461	26*	527	483	44*	487	492	-13
A-SCI Seniors (M&W) B-SCI Soph. (M&W)	496	463	33*	490	468	22*	494	505	-11
A-SCI Senior Men B-Nat'l Seniors (M&W)	504	438	66*	456	455	1	508	454	54*
A-SCI Senior Women B-Nat'l Seniors (M&W)	487	438	49*	527	455	72*	479	454	25*

*Difference of sufficient size to be statistically significant.

TABLE XVI

GRADUATE RECORD EXAMINATIONS: THE AREA TESTS

Percentile Equivalents for Mean Scores Secured Spring 1962 by SCI SENIORS Grouped According to Majors

SCI Student Groups	Number of People	National Norms - Seniors			Midwest Norms - Seniors		
		Social Science	Human-ities	Natural Science	Social Science	Human-ities	Natural Science
ALL SENIORS	517	68	63	68	72	62	66
MEN							
All Senior Men	273	71	53	71	75	49	72
No Major Declared	4	61	56	86	62	53	87
Art	9	76	81	68	79	84	66
Business Educ.	40	67	42	58	69	39	53
Elementary Educ.	4	70	50	67	74	47	64
Jr. H.S. Educ.	11	78	56	78	82	52	81
English	11	87	79	75	90	83	77
Languages	2	93	41	74	95	37	75
Mathematics	37	65	48	81	68	46	85
Music	8	57	75	52	58	77	42
Physical Educ.	40	43	29	52	40	22	42
Science	26	77	60	93	79	59	96
Biology	10	62	46	90	64	44	93
Chemistry	4	94	78	99	96	81	99
Social Science	28	91	59	68	94	57	66
Industrial Arts	19	41	34	51	37	27	41
History	16	98	60	66	99	58	63
WOMEN							
All Senior Women	244	66	75	65	69	78	61
Art	7	57	85	56	57	89	52
Business Educ.	14	63	62	57	66	62	42
Elementary Educ.	52	66	77	67	69	80	65
Jr. H.S. Educ.	10	76	80	71	79	82	72
Kg. Primary Educ.	69	59	64	60	60	63	55
English	26	78	87	68	81	91	66
Languages	1	94	89	79	96	93	81
Home Economics	9	58	83	62	58	86	57
Library Science	6	73	83	65	76	86	61
Mathematics	19	71	89	78	75	83	81
Music	5	49	69	48	45	69	37
Physical Educ.	10	44	58	64	40	56	59
Science	1	99	97	99	99	99	99
Social Science	5	92	76	60	95	79	55
Speech	2	76	75	68	79	77	66
Speech Correction	6	70	70	53	74	70	45

TABLE XVII

PERCENTILE EQUIVALENTS FOR MEAN SCORES SECURED SPRING 1962 BY SCI SENIORS GROUPED ACCORDING TO MAJORS IN TERMS OF NATIONAL SENIORS OF SAME SEX

SCI Student Groups	Number of Students	Social Science	Humanities	Natural Science
Senior Men	273	67	60	64
No Major	4	56	63	80
Art	9	73	86	61
Business Educ.	40	63	50	51
Elementary Educ.	4	67	58	60
Jr. H.S. Educ.	11	75	63	72
English	11	85	85	69
Industrial Arts	19	36	41	44
Languages	2	91	49	68
Mathematics	37	61	56	75
Music	8	53	80	45
Science	26	73	67	91
Biology	10	58	54	86
Chemistry	4	93	83	98
Physical Educ.	40	38	33	45
Speech	4	73	90	63
Social Science	28	89	66	61
History	16	97	67	59
Senior Women	244	72	67	75
Art	7	64	80	67
Business Educ.	14	69	53	61
Elementary Educ.	52	72	69	77
Jr. H.S. Educ.	10	81	72	81
Kg. Primary Educ.	69	66	54	70
Library Science	6	78	76	75
English	26	83	82	78
Home Economics	9	65	77	72
Physical Educ.	10	51	48	74
Mathematics	19	77	72	86
Music	5	56	60	57
Speech	2	81	66	78
Speech Correction	6	76	61	63
Social Science	5	95	68	70

GROWTH ON AREA TESTS
GRADUATE RECORD EXAMINATIONS
SOPHOMORE TO SENIOR YEAR

What changes should be expected from the sophomore year to the senior year in the area of general education?

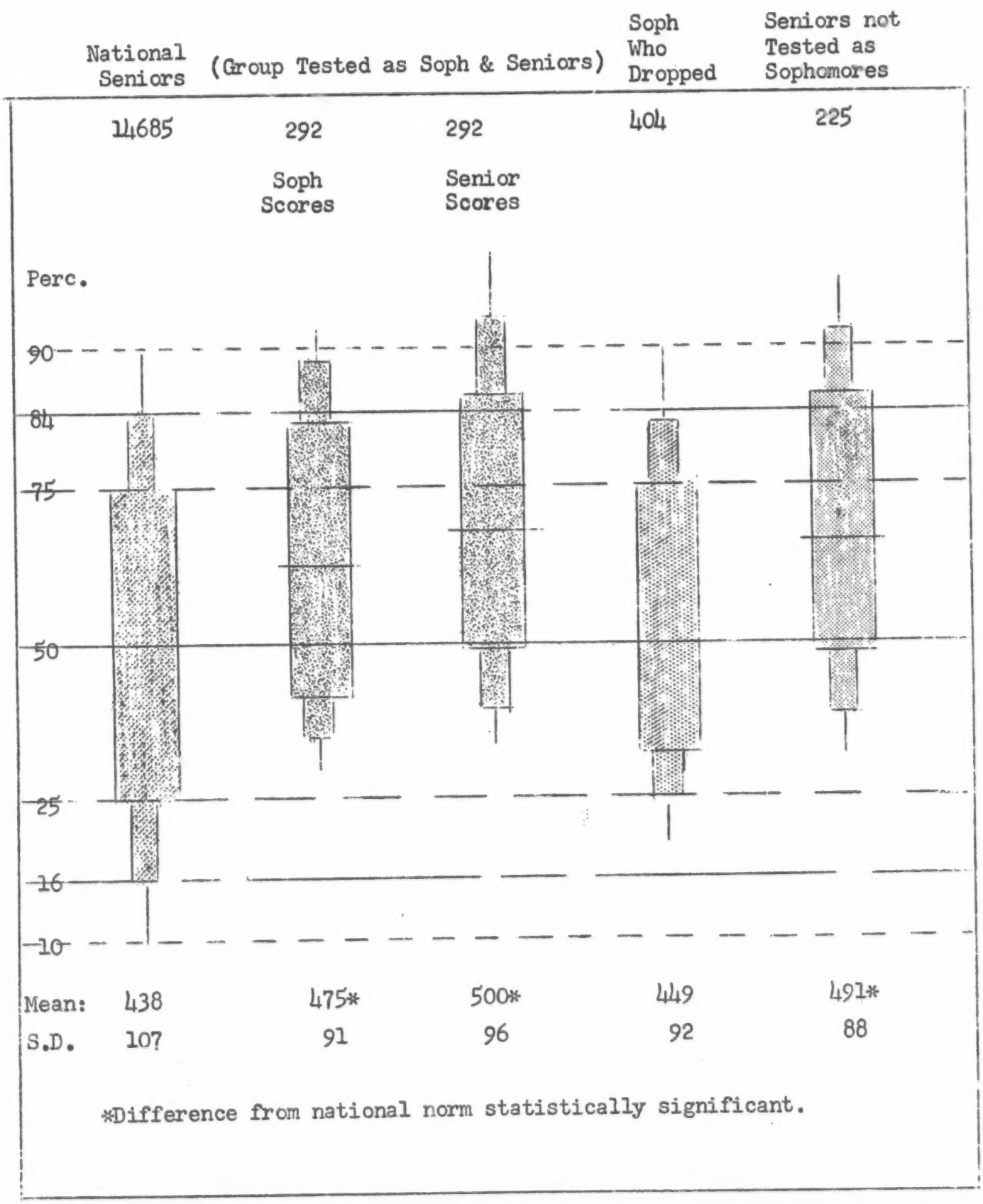
Sophomores at the State College of Iowa were given the Area Tests (GRE) in the Institutional Testing Program in 1960. Area Tests were given again in the spring of 1962 to the same group when they were seniors. The results have been charted and tabulated in Figures 18-20 and Table XVIII.

Those sophomores who took the tests in 1960 and dropped from the State College of Iowa and did not take tests as seniors, and those students who did not take tests as sophomores in 1960 but who transferred to SCI later and took tests as seniors have both been eliminated from the base group. This procedure was followed in order to study the performance of the same group, student for student.

There are in fact three groups in this analysis, as follows: (1) Those students who took the Area Tests (GRE) as sophomores and as seniors; (2) those students who took the tests as sophomores but who dropped and did not take tests as seniors; and, (3) those students who transferred to State College of Iowa after 1960 and took tests only as seniors.

AREA TESTS

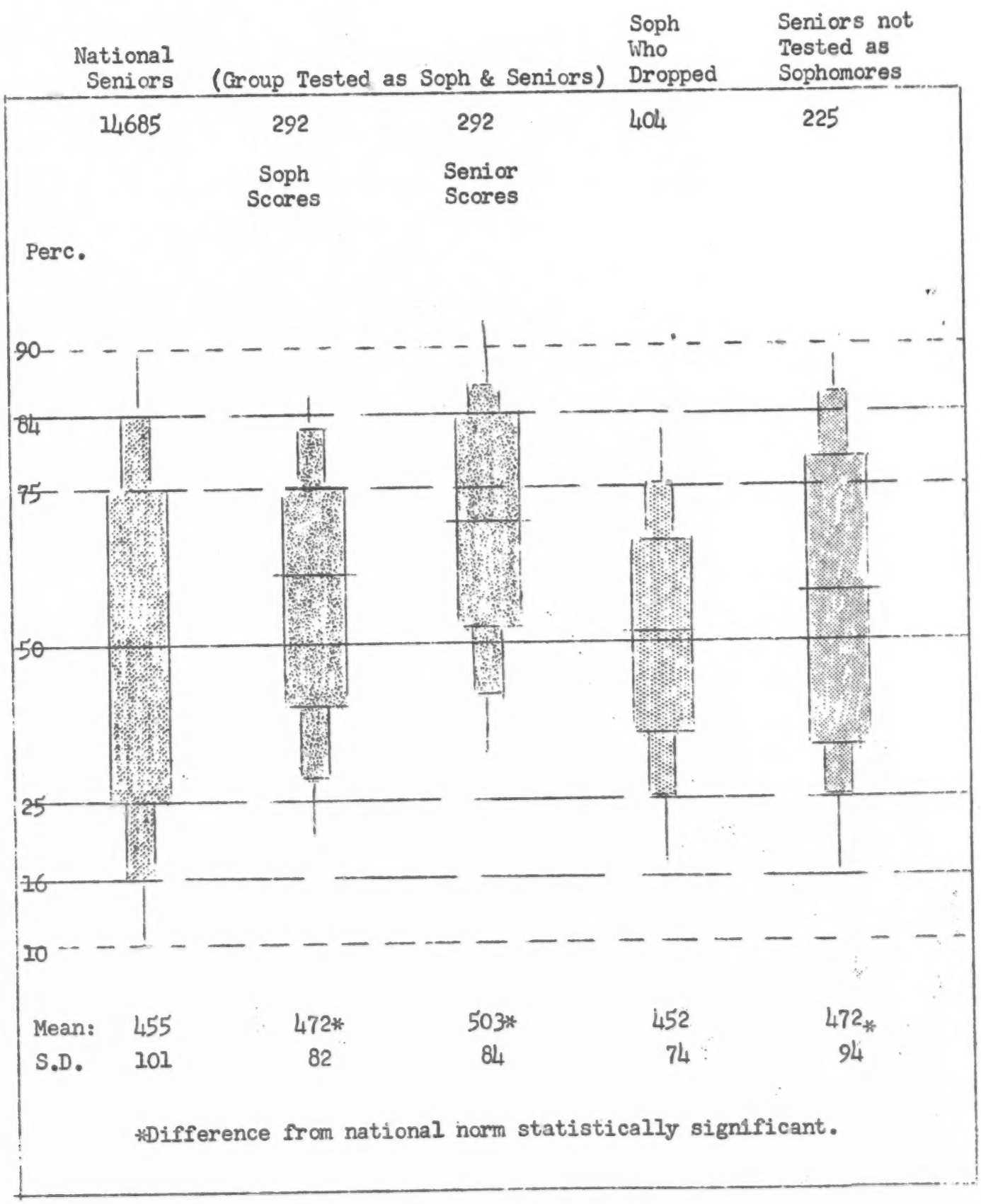
Figure 18: Comparison of Sophomore and Senior Performance on Area Tests (GRE) in SOCIAL SCIENCE



*Difference from national norm statistically significant.

AREA TESTS

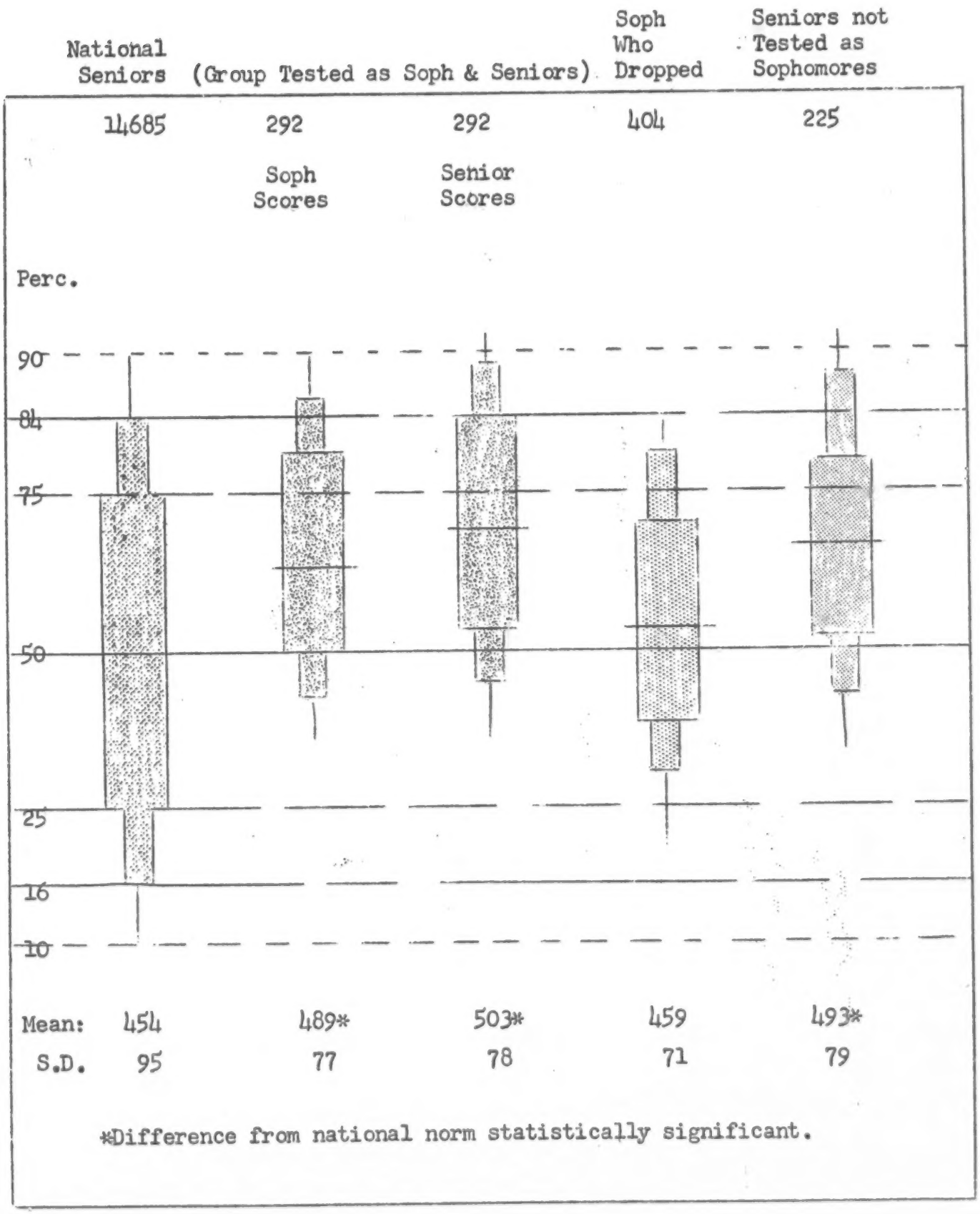
Figure 19: Comparison of Sophomore and Senior Performance on Area Tests (GRE) in HUMANITIES



*Difference from national norm statistically significant.

AREA TESTS

Figure 20: Comparison of Sophomore and Senior Performance on Area Tests (GRE) in NATURAL SCIENCE



*Difference from national norm statistically significant.

TABLE XVIII

PERCENTILE RANK ON THE THREE AREA TESTS FOR FOUR GROUPS OF STATE COLLEGE OF IOWA STUDENTS

Area Tests	Group Tested As Soph & Seniors		Soph Who Dropped	Seniors Not Tested As Sophomores
	Sophomore	Senior		
Social Science	62	69	54	68
Humanities	58	67	51	58
Natural Science	65	69	55	66

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PART IV

SENIORS

ADVANCED TESTS, GRADUATE RECORD EXAMINATIONS

Senior students at the State College of Iowa were tested with the Advanced Tests, Graduate Record Examinations. The Advanced Tests were used to evaluate achievement in the student's major area of emphasis. National norms for seniors on the Advanced Tests and norms established on midwest colleges have been used.

The following Advanced Tests were available:

Biology
Chemistry
Education
French
History
Literature
Mathematics
Music
Physics
Spanish
Speech

The following subject matter tests were selected from the Teaching Field Tests, TEACHER EDUCATION EXAMINATION PROGRAM, Educational Testing Service:

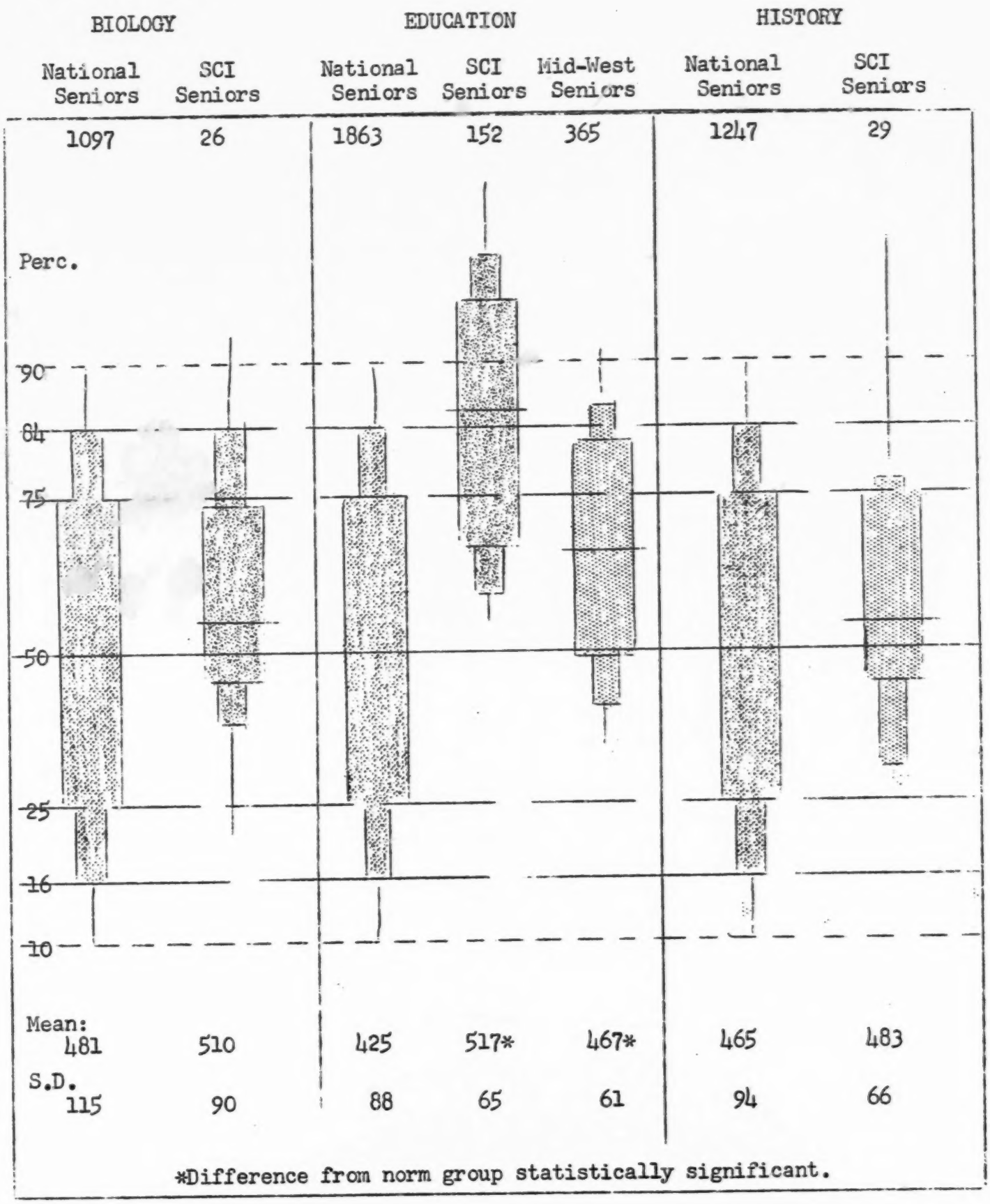
Social Studies
Industrial Arts

In the area of Business Education, a test in Business Fundamentals and one in Bookkeeping were selected from the Business Education Testing Program of the Joint Committee on Tests, United Business Education Association (NEA), Washington, D.C.

NOTE: When the number of students in an area dropped below 15, test performance was not graphed.

SENIORS

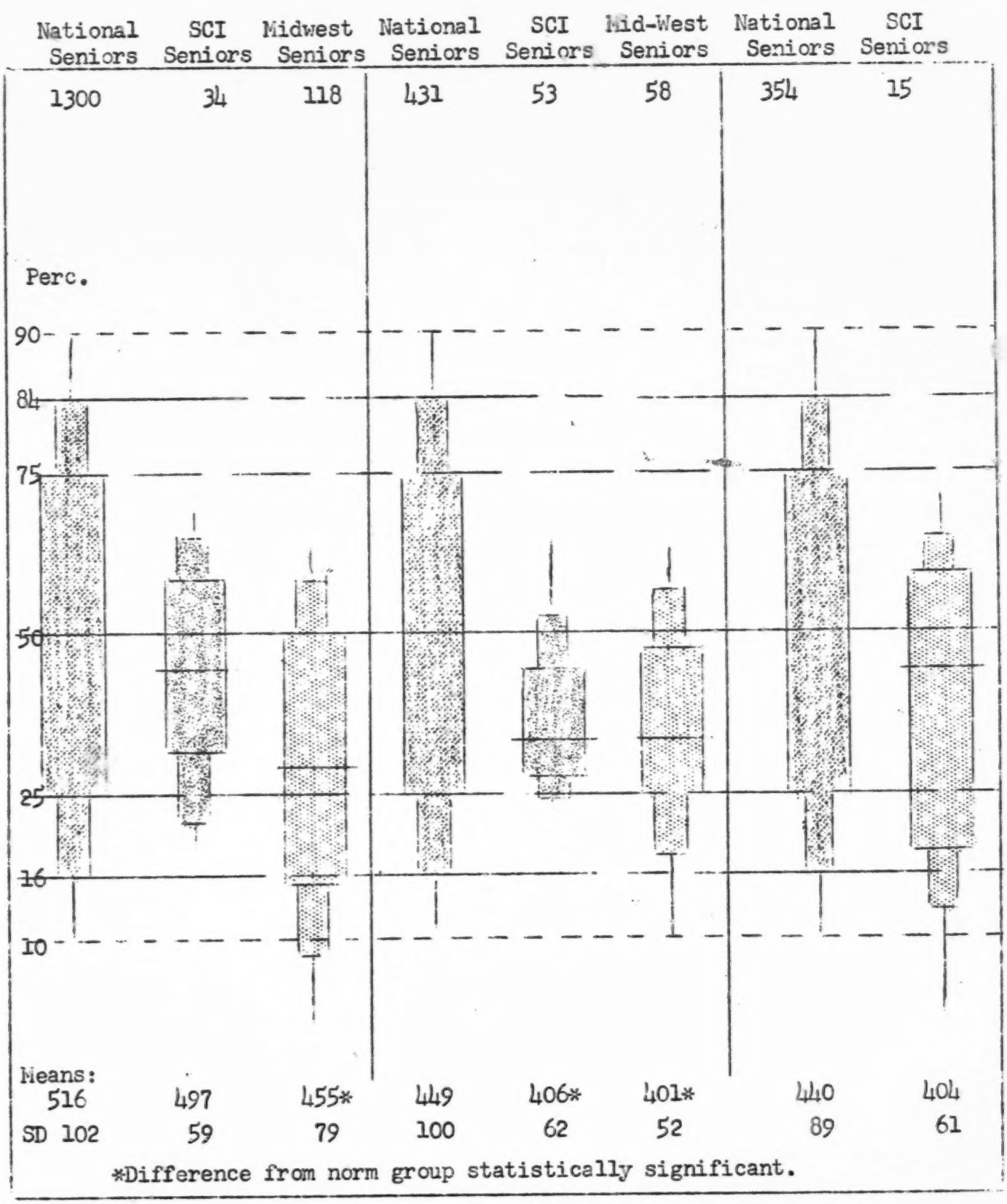
Figure 21: Comparison of Performance of SCI Seniors Tested Spring 1962 and Mid-West Seniors Tested Spring 1961 with National Norms for Seniors on Advanced Tests



*Difference from norm group statistically significant.

SENIORS

Figure 22: Comparison of Performance of SCI Seniors Tested Spring 1962 and Mid-West Seniors Tested Spring 1961 with National Norms for Seniors on Advanced Tests



*Difference from norm group statistically significant.

TABLE XIX

MEAN SCORES OF STATE COLLEGE OF IOWA SENIORS ON ADVANCED TESTS OF THE GRADUATE RECORD EXAMINATIONS

Advanced Test	Mean Scaled Scores		
	National Seniors	SCI Seniors	Difference
Biology	481	510	29
Chemistry	501	498	- 3
Education	425	517	92*
History	465	483	18
Literature	516	497	-19
Mathematics	449	406	-43*
Music	440	404	-36
Physics	470	399	-71*
Speech	444	544	100*
TEEP PROGRAM TEACHING FIELD			
Industrial Arts	21.6	21.8	0.2
Social Science	19.9	23.0	3.1

*Difference is sufficiently large to be statistically significant.

State College of Iowa Business Education majors made a median score on the Business Fundamentals Test equivalent to the national 76th percentile.

The median score on the Bookkeeping Test was equivalent to the national 41st percentile.

TABLE XX

COMPARISON OF SENIORS OF 1961 AND SENIORS OF 1962
ON DISTRIBUTION OF SCORES ON ADVANCED TESTS OF GRADUATE RECORD EXAMINATIONS

Scaled Score	Advanced Tests																			
	Biol.		Chem.		Educ.		Hist.		Lit.		Math.		Music		Physics		Span.		Speech	
	61	62	61	62	61	62	61	62	61	62	61	62	61	62	61	62	61	62	61	62
770	1																			
710													1							
700																				
690		1		1																
680																				1
670	1			1		1														
660		1			1	1				1										
650						2				1			1							
640						2			1											1
630	1							1												
620			1			4		2												
610					3	3	1			1									1	
600		2			3	4	2													
590	3			1		7			1				1							
580					3	3		1			1									
570		1			1	7	1			1	1								1	
560					7	13	2		2	3		1								1
550		3			5	9			3			1	1						1	1
540		1			6	3			1	2	1									
530	3	1			5	13		4	2	1	1	1		1						
520	1	1		1	11	10	2	1	2	3		1							1	
510			1		13	9	4		2	2		1	2						2	
500		1			6	5	1	1		3										1
490		2		1	10	4	2	2	1	1									2	
480		2			9	8		2		3				1			1		1	1
470	1	2	2		10	8	1	3		3	3	1								
460		1	2		9	6	4	2	1	2				1						
450	2		1	2	8	8	2	3	3			1		1						
440	1	2		1	10	7	2		2		1	4	1			1			1	
430				3	2	4	2	2	1	2	2	1		2	1	2	1			
420		1			5	2			1	2	2	4	3	2					1	
410					5	4		2	1		2	4	3		1	1				
400					8	1		1		1	1	5	2	1	1					
390	1			1	2						1	10	2			1			1	
380					2	2					6	5	1		3	1				
370	1	2									1	6	1	1	1				1	
360	1				1			1		1	1	3		2	1	1			1	
350						2		1			2		1			1				
340		1										1	1	1						
330										1	2	1	2				1			
320											3	2								
310														1					1	
300														1			2		1	
Number	17	26	7	12	145	152	27	29	24	34	31	53	23	15	8	8	5		17	5
Means:																				
1961	522		491		487		507		504		410		440		389		368		470	
1962	510		498		517		483		497		406		404		399				544	